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Washington, Feb. '08--A co-operative agreement for the patrol of dangerous foot hill areas in and around the Sierra (S) National Forest, California, where forest fires have done considerable damage in the past years has just been entered into by the United States Forest Service and G. B. Lull, State Forester of California. The work will be in co-operation with Kern and Tulare counties. Each county will furnish two fire wardens to serve from May 15 to October 15, and the government will furnish two guards in each county for the work during the same period. The entire force of eight men will be appointed by the officers in charge of the Sierra Forest and the patrol organized and directed so as to protect most effectively the entire foot hill belt within and outside the National Forest. The protection of this foot hill region is most important, for it is the most dangerous fire belt in California.

State Forester Lull is most hopeful that the plan will work in checking the dangerous forest fires to a degree where loss through them will be very little compared with losses in previous years. The government's foresters in Washington have also approved the plan of co-operation in all of its details and have said that the Forest Service will be ready to put it in effect in other forests in California where local conditions warrant and where the necessary guards can be furnished without serious injury to their work. Forest officers and individuals who desire such co-operation in fire fighting between the government and the state have been requested to confer with State Forester Lull.

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PORTO RICAN NATIONAL FOREST

TO BE PUT UNDER ADMINISTRATION

1908

Washington, Feb. '08--Porto Rico will soon have its only National Forest under administration. Mr. M. Rothkugel, of the United States Forest Service has just sailed from New York for the island to make a study of forest conditions and outline a plan of management of the Loquillo National Forest.

The Loquillo is the only National Forest in the insular possessions of the United States, and while it was created in 1903, provisions for its administration were not made until early in January when the Comptroller of the Treasury affirmed the jurisdiction of the Department of Agriculture over the forest.

The forest takes in a little less than 66,000 acres and is located in the northeastern part of the island. Mr. Rothkugel, who goes to make the plan of its administration and study of its forest conditions, is eminently fitted for the work, having had long experience in forest work both for the government and for private corporations. Mr. Rothkugel, on reaching Porto Rico will confer with Governor Post, who has been exceedingly anxious that the forest be put under early

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administration. He will spend three months studying conditions and making his plans and will report to Forester Gifford Pinchot.

While in Porto Rico he will select and appoint native rangers picking men who have a thorough knowledge of forest conditions in Porto Rico. This is in keeping with the government's policy of putting all National Forests under administration of local officers.

Many of the laws governing the regulation of the National Forests in this country will not apply to Porto Rico forests because of the different conditions. It is expected that the Loquillo National Forest will be put under actual administration next fall, by which time the details of Forest agent Rothkugel's plans will have been worked out and approved by the forest officers in Washington.

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U. S. Forest Service
[Pamphlets]

CALAVERAS BIG TREE

NATIONAL FOREST BILL SIGNED

1909

Washington, Feb. --By signing the bill for the creation of the Calaveras National Forest, California, President Roosevelt has completed the legislative act which saves for all time the most famous grove of trees in the world. The people of California, particularly the 500 women of the California Club, have been working to interest the Government in this wonderful grove of Big Trees for more than nine years, but not until now has it been possible to arrange a plan satisfactory alike to the owner of the land and to Congress.

The Senate Bill passed by the House of Representatives has just been signed by the President. Everyone interested in the great natural wonders rejoices that as a means of saving the Big Trees, the way has been paved for a practical exchange of the timber in the groves for stumpage on other forest land owned by the Government. The first Calaveras Bill was introduced in the Senate four years ago by Senator Perkins of California. Bills for the same purpose were passed in the upper house of Congress a number of times, but always failed of favorable consideration in the House until Senate Bill 1574, also introduced by Senator Perkins, was called up by Congressman S. C. Smith, of California, last week.

Robert B. Whiteside, of Duluth, Minnesota, a prominent lumberman operating in the Lake States and on the Pacific Coast, is the owner of the Calaveras Big Trees. After his agreement to the proposals which are simply a practical exchange of timber for timber, the entire California delegation gave its solid and enthusiastic support to the bill. No appropriation is needed to carry out the provisions of the act.

The land to be acquired under the bill includes about 960 acres in what is known as the North Calaveras Grove in Calaveras County, and 3,040 acres in the South Grove in Tuolumne County. The North Grove contains ninety-three Big Trees and in the South Grove there are 1,380 of these giant sequoias. Any tree under eighteen feet in circumference, or six feet through, is not considered in the count of large trees. Besides the giant sequoias there are hundreds of sugar pines and yellow pines of astonishing proportions, ranging to the height of 275 feet and often attaining a diameter of eight to ten feet. There are also many white firs and incense cedars in the two tracts. A government study of the land was made by a field party under the direction of Fred G. Plummer, United States Forest Service, in 1906.

The Calaveras Big Trees are known the world over. The North Grove contains ten trees each having a diameter of twenty-five feet or over, and more than seventy having a diameter of fifteen to twenty-five feet. Most of the trees have been named, some for famous generals of the United States and others for

statesmen and various states of the Union. "The Father of the Forests," now down, is estimated by Hittel, in his "Resources of California," to have had a height of 450 feet and a diameter at the ground of more than forty feet when it was standing. "Massachusetts," contains 118,000 board feet of lumber; "Governor Stoneman" contains 108,000 board feet, and the "Mother of the Forest," burned in the terrible forest fire which licked its way into a part of the grove last summer, contains 105,000 board feet. Each of these trees named grows as much lumber as is grown ordinarily on fifteen or twenty acres of timberland. The bark runs from six inches to two feet in thickness. Among the other large named trees in the two groves are "Waterloo," "Pennsylvania," "James King," "Old Bachelor," "Pride of the Forest," "Daniel Webster," "Sir John Franklin," "Empire State," "U. S. Grant," "W. T. Sherman," "J. P. McPherson," "Abraham Lincoln," "Connecticut," "Ohio," "Grover Cleveland," "Mrs. Grover Cleveland," "Dr. Nelson," "General Custer," "Dr. J. W. Dawson," "General Hancock," "Knight of the Forest," "Two Sentinels," and "Old Dowd."

####

BETTER WOOD UTILIZATION STUDY

IMPORTANT IN FOREST CONSERVATION

1909

San Francisco, Cal., April --Forest conservation means the striving for a better utilization of forest products and the consequent checking of useless waste as much as it does the protection of forests from fires and the reforestation of lands which should grow timber, according to foresters and progressive lumbermen of the new school.

Few people have a clear idea of the importance of the study of proper wood utilization, and one of the effects of the establishment of the Forest Service District offices most beneficial to the people of the West is the possibility of a close, helpful relation with a branch of the Service whose workings have heretofore been little understood in this region. This is the Branch of Products.

The work of this part of the Forest Service has to do with the best and most economical utilization of the products of the forest, not only lumber and its products but also the bark, resin, sap, and even leaves of these trees of which these parts are of value to man.

It is not enough that care should be given to the growing of a new forest and to the careful and economical cutting of

the present crop of trees, but it is of equal importance that care be taken to bring about as complete a utilization of the tree as possible and to make the utilized timber serve its purpose as long as possible. To bring about the utilization of what is now wasted in manufacture or to increase the usable life of timber is considered as much forest conservation as to grow a forest where the original has been cut off.

Since more than 50 per cent of the growing tree is not utilized according to American methods of lumbering it appears that there is a considerable need of study along the line of more economical utilization. Although existing conditions are so different as to make comparison difficult yet the fact that in Germany practically 80 per cent of the tree is used gives some indication of what may be accomplished where the price of lumber and the lack of a sufficient supply make efficient and careful methods indispensable.

The Branch of Products has made a special effort to make possible the utilization of the waste incident to manufacture after the log has reached the mill. For some time experiments have been carried on studying the possibilities of utilizing slabs and sawdust. In regions where there is a sufficient demand a considerable income is derived from the secondary manufacture by private parties, of slabs and edgings into box shooks, barrel staves, and lath. As yet private and federal efforts to utilize sawdust have not been as successful

as may be desired. The lines of most promise, however, have been its use in paper making and in the distillation of pine sawdust for the production of turpentine. Much remains to be accomplished, however, to make this work an unqualified success.

Still another dissipation of timber wealth has occurred through prejudice or the ignorance of the properties of certain woods. For some reason certain species have been considered as inferior largely because such a prejudice has been formed against them as to render them practically valueless on the lumber markets on which account they were left in the woods, a total loss. In many cases the popular conception of their value has later not been borne out by the facts, or has been found to be the result of ignorance of the proper method of handling these species.

Notable examples are those of the hemlock and red gum in the East, which for a long time were considered worthless and were wasted, but which upon a better understanding of their use and properties have come to have considerable value as lumber trees. The western hemlock and tanbark oak suffered the same fate, and caused the total loss of millions of feet of good lumber. To eliminate this waste timber testing laboratories are conducted by the Forest Service in which woods are tested to ascertain their true value and properties and to formulate methods whereby they may take their rightful place among the woods of economical value to man.

The Forest Service with District headquarters in San Francisco is ready to give what information it may have at its command concerning the value and properties of any wood or to cooperate with private individuals to make tests on woods concerning which no information is at hand.

One of the chief lines of activities in the San Francisco office of products undoubtedly will be the preservative treatment of timber, since the conditions of the timber supply in relation to demand in all parts of the country are such as to make the increase of the durability of timber of greatest import to those industries dependent upon its use. Considerable study in the preservation of timber used for cross-ties has already been carried on by the railroads which traverse this region.

The most common and successful treatment of lumber is the impregnation with some one of the solutions obtained from the distillations of coal. These substances prevent decay by their action as antiseptic against wood destroying bacteria and fungi and by preventing the entrance of moisture into the wood. Zinc chloride is used to some extent, but being soluble in water it leaches out after a time and its value as an antiseptic is lost.

This district also offers a wide field for active work in utilizing mill waste. Because of a more plentiful timber supply in this region, compared with several of the other districts, the lumbermen have not considered it necessary to make the closest utilization of the tree. In many sections the less progressive mills are wasting mountains of sawdust which might be used for

wood distillation and the extraction of turpentine and alcohol, or even for fuel. Thousands of tons of slabs are wasted in the same way.

The Office of Products of this District is desirous of coming in touch with all who use timber where preservation would lengthen its use and stands ready to render practical assistance both by furnishing information concerning the treatment of timber and by cooperating in the installation and operation of timber treating plants.

###

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The Forest Service will be glad to see a **marked copy** of any paper in which this information may appear. By pasting the attached frank on the wrapper the paper can be mailed without stamp.

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THE FORESTER,
Forest Service,
(Marked Copy) WASHINGTON, D. C.

The stockmen grazing their cattle on the National Forests in the Southwest, especially in Colorado and New Mexico, have suffered serious losses during the present summer through the cattle eating oak leaves.

In that section of the country the season has been unusually dry and grass extremely scarce. To eke out the scanty forage supply, the cattle have browsed heavily on the scrub oak which covers large portions of the range. Ordinarily the stock does not browse much on the oak and the little they do get, taken with the other food, is not injurious, but when, as in the present season, the oak browse furnishes a large proportion of the daily food of the cattle, the results are serious.

The oak leaves and sprouts contain a large percentage of tannic acid. The action of this acid on the stomach is extremely injurious and the losses have been unusually severe. The symptoms of the disease are staring eyes, feverish and blistered lips and nose, the animal ceases to graze or seek for food, standing in one place for hours at a time. The coat becomes rough

OAK LEAF DIET KILLS

CATTLE IN SOUTHWEST

1909

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and the hair is all turned the wrong way, as in cases of loco poisoning. The animal does not chew its cud and in a comparatively short time it becomes too weak to remain on its feet and death rapidly follows.

So far as is known the only available remedy for this trouble is linseed oil given as a drench in amounts from one to two quarts. The oil appears to overcome the injurious effects of the tannic acid and if the disease is not advanced too far and the animal can be furnished sufficient food so it will not be forced to eat the oak, it will generally recover. The best method, of course, in handling the trouble, is, if possible, to get the cattle away from the range where the oak is found and furnish them with plenty of fresh green feed to build up again.

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WORK OF THE FOREST SERVICE WHICH TENDS
194,500,000 ACRES OF NATIONAL FORESTS

Not Released Until
SUNDAY, MAY 30 109

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tive force of the Forest Service from Washington into the field, and the division of the western country into six forest districts, each in charge of a district forester, the practical management of Uncle Sam's forests on a business basis is being pushed forward even more effectively than heretofore. Only the general administrative heads of the Service and the men engaged in government forestry work in the eastern part of the country retain their headquarters in Washington.

For the better administration of the 194,500,000 acres of National Forest land, this vast territory is divided into 149 National Forests, each in charge of a Forest Supervisor. In all cases, the Supervisor is selected for his wide practical knowledge of the West, and of lumbering and grazing particularly. He may or may not be a trained forester. If not a trained forester himself, he has such a man to assist him. It is the business of the Forest

WORK OF THE FOREST SERVICE WHICH TENDS 194,500,000 ACRES OF NATIONAL FORESTS

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Following the movement of the larger part of the executive force of the Forest Service from Washington into the field, and the division of the western country into six forest districts, each in charge of a district forester, the practical management of Uncle Sam's forests on a business basis is being pushed forward even more effectively than heretofore. Only the general administrative heads of the Service and the men engaged in government forestry work in the eastern part of the country retain their headquarters in Washington.

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Supervisor and his technical aids to bring their forest gradually to a condition of maximum productiveness. To do this requires a great deal of detailed study and skillful planning. Each step, from the care and protection of the young growth to the lumbering of the mature forest must be carefully considered and as carefully executed if the forest is to go on producing trees indefinitely.

For each of the many lines of work to be carried on in the forest, men with special experience are required. Those who prepare and tend the nurseries must be experienced in raising and caring for young trees. The lumberman, who cruises and estimates timber, helps to plan logging operations, and sees that the scaling is correctly done and that the rules for logging are properly observed, must be an experienced and capable woodsman. The Forest Ranger patrols his district of the forest to see that fire and trespass are prevented, that the range is not overgrazed, that logging regulations are enforced, and that the privileges granted by permit for the use of the various forest resources are not abused; he also must be hard-headed, practical, and thoroughly honest, an able-bodied citizen of the West, with plenty of experience in all the problems with which he may have to deal. The trained foresters are usually Forest School graduates. Their training is somewhat parallel to that of the civil engineer, but particular attention is paid to the study of botany, to the life and growth of forests, and to all that affects their development and usefulness. In

addition to his scientific training, the American trained forester must have abundant practical experience in the woods, on the range, and in the mills, for he must have a thorough understanding of all conditions before attempting to work out a system of good business management of any forest.

For the general administration of the National Forests, the western half of the United States is divided into six districts with headquarters at Missoula, Montana; Denver, Colorado; Albuquerque, New Mexico; Ogden, Utah; San Francisco, California, and Portland, Oregon.

The object of the Forest Service is to foster proper use of the forest resources of the country, including private and State, as well as National Forests. Upon the latter every resource is for use in the best interests of all citizens of the United States. Every water power site, every piece of mineral land, every bit of grazing land or of good agricultural land is for use, provided it is not required for public purposes. The remainder of the land which is forest is of course put to the best use by the practice of forestry when it is made to produce as much timber as possible. In order that the administration may be most effective the various offices have been established at Washington and at the district headquarters, each in charge of trained and experienced men directing specialized lines of work.

The Office of Operation attends in each district to the protection and administration of the National Forests and employs engineers, expert miners, and foresters to investigate claims, make surveys and maps, and supervise the building of telephone lines, trails, roads, bridges, ranger stations, and other permanent improvements.

The Office of Grazing looks after the range, cooperates in the enforcement of quarantine regulations, and issues permits by which the grazing of stock within each National Forest is so regulated as to improve rather than destroy its grazing capacity. It studies the best means of reseeding the range and conducts investigations and devises means of checking the growth of poisonous plants which are injurious to live stock.

The Office of Silviculture makes a special study of the management of timbered lands in order to make them yield the largest permanent returns. It makes timber sales on the National Forests, plants trees on bare National Forest land, makes estimates and forest working plans, investigates forest conditions and all problems connected with the life and growth of trees, and gives advice where possible to private parties who are interested in similar lines of work.

The work of the Office of Products is the determination of all ways and means possible for utilizing wood and timber, in order to make the business of forestry both economical and profitable. Markets and wood-using industries everywhere

are being investigated, statistics of forest products are being collected, and the comparative strength of building timbers with reference to their use for various purposes is being determined by accurate scientific tests. The Office of Products also makes a study of the best ways of preserving timbers, and cooperates with private telephone companies, railroads and other timber using interests in determining the best methods applicable in each case. Experimental treating plants for this purpose are being established throughout the country.

In short, the Forest Service is endeavoring to bring about the practice of true forestry--"the preservation of forests by wise use." And the keynote of the entire Service, the watchword of each member, from the chief down to the forest guard, is conservation--the devotion of every resource to the best possible use, and the preservation of all renewable resources for the use of future generations.

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(From U. S. Department of Agriculture, Forest Service.)

GOVERNMENT SELLS TIMBER

IN CALIFORNIA AND ARIZONA.

1909

Two sales of government timber, aggregating over 51,000,000 feet, are announced by the U. S. forest service. The LaMoine Lumber and Trading Company contracts to cut 28,300,000 feet of saw timber from the Shasta National forest of California, and the Saginaw and Manistee Lumber Company of Flagstaff has purchased 24,300,000 feet of green and dead pine and fir timber on the Tusayan national forest of Arizona.

The California sale includes several kinds of timber at the following rates per thousand feet: $3.25 for sugar pine, $2.25 for yellow pine, $1.25 for Douglas fir, and 50 cents for other species. The cutting period is nine years, subject to a readjustment of stumpage rates in 1918.

The area on the Tusayan is near Williams, on the Santa Fe lines, which furnish ready access to the general markets. The timber is to be cut prior to December 31, 1915, and the contract price is $2.50 per thousand feet.

In both these sales the timber will be cut by the companies in conjunction with timber owned by them in the vicinity. The government expects to get an approximate gross return of $115,000 from the two sales, of which about $23,750 will go to the counties in which these forests are situated, in lieu of taxes.

THREE MILLION MATCHES

STRUCK EACH MINUTE

1909

MEMORANDUM

In the item with the above title for release Dec. 11 an unfortunate error is made in the third sentence in the first paragraph where seven appears instead of fifteen hundred. The first paragraph should have read as follows:

By the end of the brief minute taken to read these paragraphs the nations of the civilized world will have struck three million matches. This is the average for every minute of the twenty-four hours of the day. FIFTEEN HUNDRED billion is the enormous number for the entire year; and those living under the American flag are said to be responsible for the consumption of one-half of this amount.

It is probably too late for you to make the change when the item is printed. If it is not, it will be considered a favor if you would do so.

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SWITZERLAND ADVANCED IN

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THE FORESTER,
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fectly managed and most profitable forests in the world, has been handled under a working plan since 1680. The little Alpine republic still reports progress in forest work, and the American consul writing from St. Gall says:

"The government of Switzerland has so carefully regulated the timber output that it has never been permitted to exceed the natural growth. The thick growth of timber on the mountain sides, purposely allowed to become dense, has perceptibly lessened the danger and frequency of avalanches and landslides, which in former times were so frightfully destructive. To control the spring floods in the rivers and streams, massive dams, fortified by thickly planted trees, have been erected at exposed places. In the extraordinary attention paid to its timber lands, the government has taken into account also the necessity for sheltering and pasturing cattle, the maintenance of the soil, the roads, and the natural springs, climate, and the control of mountain streams.

SWITZERLAND ADVANCED IN
PRACTICE OF FORESTRY
Dec, 1909.

Switzerland recognized the benefits of forest protection and development 600 years ago when the forest ordinance of Bern was issued. The Sihlwald of Zurich, one of the most perfectly managed and most profitable forests in the world, has been handled under a working plan since 1680. The little Alpine republic still reports progress in forest work, and the American consul writing from St. Gall says:

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"The actual forest area of Switzerland comprises 2,205,508 acres, 21.48 per cent of the entire surface of the country, 77,004 of which belong to the state and 2,128,504 to the cantons, communes, municipalities, and private corporations. Seven hundred and eighty-one acres of the state forest are set aside as a nursery. From this nursery in 1908 over 22,000,000 young trees were taken and transplanted in the various forests.

"Swiss forests are classed as 'protected' and 'non-protected.' The former are those which are situated on mountain slopes where the imminence of washouts, stone and ice chutes, landslides and avalanches calls for the constant exercise of extraordinary care and attention. The 'non-protected' are those on comparatively level ground requiring only ordinary attention to keep them in good condition. Because of the character of the country, the great majority of the forests are 'protected.'

"The law provides that 'the forest area shall not be diminished' and that all forests shall be maintained in a fairly dense condition. Even in private forests close cutting or clearing up is strictly forbidden, especially in exposed places, without the consent of the federal authorities, and then only in small areas and when prompt reforestation is guaranteed. Trees for cutting are carefully selected by forestry experts.

"Through the forests there are excellent roads, made largely by the cantonal authorities. The year 1908 was marked

by such activity in road construction that the state, which bears a proportion of the expense, paid to the cantons the sum of $46,634.00 on their account alone.

"Spruce is the most important tree in the Swiss forests, and then in order of their importance come the white fir, beech, larch, pine, cypress, and a few other varieties.

"The principal revenue derived from the Swiss forests is from the lumber output, there being no manufactures of resin, turpentine, and similar by-products. To offset the cutting, there were planted in 1908 23,096,225 trees, of which 18,031,590 were conifer and 5,064,635 deciduous, and no less than seven tons of seed were sown.

"Statistics of the receipts and expenditures of all forestry work in the country are not available, but a couple of cases may be cited which show gratifying returns. The total receipts from the sale of wood in 1908 from 2,421 acres of state forests in the canton of St. Gall are given as $24,457.37 and the expenditures as $7,104.81, leaving a clear profit of $17,352.56. In the forests of the town of Winterthur, amounting to 2,833 acres, the receipts were $51,174.63 and the expenses $21,634.50, leaving a net profit of $29,540.13, or an average profit of about $10.42 per acre.

"It is not to be presumed that the revenue from the entire Swiss forest area can be approximated by taking as a basis

the earnings of the St. Gall or Winterthur forests, which have been for many years under most intelligent and excellent management; but the universal opinion among forestry officials is that the jealous care with which the Swiss timber lands have been guarded has vastly benefited both national and cantonal treasuries from the financial point of view."

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1969

TIMBER OWNERS ORGANIZE TO FIGHT FIRE

One of the most important economic movements of the day about which the general public has yet learned little is the concerted action of owners of timber in different parts of the country in organizing associations to protect their holdings from fire. In the Pacific Northwest, the Washington Forest Fire Association has just elected officers at Seattle and begun work for the year with 3,000,000 acres under its care. The plans include a system of patrol by rangers resembling the work done by the United States Forest Service in guarding against and extinguishing fires.

Organizations of similar kind and for a like purpose are at work in Oregon and Idaho. In the latter State, a portion of the expense is borne by taxation and paid from the State treasury. A western railroad company which holds large tracts of timber has taken steps to guard its property from fire, and during the short time that its plans have been in operation, it has met with most encouraging success.

Similar work is being done on the other side of the continent. Forest owners in Maine have gone to work in the same systematic way to control the forests' great enemy, fire. Like organizations are found in other parts of the country,

showing how fully it is now realized that protection against fire is of the greatest importance.

It is safe to say that fires in this country have destroyed more timber than lumbermen have cut. When timber was abundant, the waste passed almost unnoticed, but now that a scarcity is at hand and an actual wood famine threatens in the near future, the owners of forest lands are waking up and taking action to save what is left.

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UNITED STATES DEPARTMENT OF AGRICULTURE

FOREST SERVICE

(From The Forest Service, U. S. Department of Agriculture
San Francisco Office.)

E-4

GOVERNMENT MAKES PAPER

FROM NEW WOODS

1922

Washington, May 29:-- That satisfactory wood pulp can be made from a number of heretofore little known woods is evidenced by a Government publication just issued, which contains seventy samples of paper manufactured by different processes, chiefly from woods heretofore practically unused for this purpose.

It is pointed out that the spruce forests of the country are threatened with exhaustion and that the cost of spruce pulpwood has steadily increased. If the price of news print paper is to be kept at a reasonable figure, say the experts, more efficient methods of converting spruce into pulp must be developed or cheaper woods substituted for it.

The bulletin goes on to say that the method of manufacturing groundwood pulp has changed very little since its introduction into this country in 1867. It was with the idea of developing new methods and improving the old that tests were undertaken at the Forest Service laboratories at Wausau and Madison, Wisconsin. As a result the relation of the different steps in the manufacturing process to each other has been definitely established and the merits of each treatment determined. The paper made from new woods was given a practical tryout by two large newspapers with satisfactory results.

The tests showed that eleven new woods give promise of being suitable for the production of news print paper, while a number of others will produce manila paper and boxboards. Most of these woods are confined to the West, while the groundwood industry now obtains the bulk of its raw material from the East. It is thought that pulp-making plants must eventually move to points where they can obtain a plentiful supply of wood and an abundance of cheap waterpower, two prime requisites in the business.

Since the National Forests contain immense quantities of the suitable woods and abundant opportunities for power development, they will undoubtedly play an important part, it is said, in the future of the wood pulp industry. White and red fir are the most promising species in the National Forests in California, although lodgepole and western yellow pine and Douglas fir may sometimes be used.

# # #

6-24-13

FOREST NOTES

The Balkan War has brought about a rise in certain lumber prices in Europe because of the big demand for wood for ammunition boxes.

Dogwood, the principal source of shuttles for use in cotton mills, is growing scarcer year by year, and various substitutes are being tried, but with no great success.

The officials of the Yosemite National Park are cooperating with the forest officers of the Stanislaus and Sierra national forests for fire prevention and control in both the park and the forests.

Experiments with a tree planting machine at the Utah Agricultural Experiment Station indicate that it may be used to advantage in reforesting old burned areas on the national forests.

The leading forest schools of the country not only have their own forest tracts for continuous experiments, but give their students actual experience in the woods by having them take part in big lumbering operations.

# # # #

(From the U. S. Forest Service.)

ALASKA TIMBER
FOR PAPER PULP

NOT RELEASED FOR PUBLICATION
UNTIL JULY 5, 1913.

Washington, July 3 .--Bids have just been received by the Forest Service for 300 million feet of timber which has been advertised for sale on the Tongass National Forest in Alaska, and an additional 300 million feet from the same forest has been applied for. A large part of this timber is Sitka spruce, which will be made into paper pulp not only for the Pacific Coast and the Orient, but for the general pulp market.

The latest estimates available show that there is a stand of approximately 70 billion feet on the Tongass National Forest and approximately 28 billion feet on the Chugach National Forest in Alaska. Recent investigations have shown this amount to be very much larger than was supposed. The Alaskan Forests in fact contain approximately one-sixth of the total stand of timber on the national forests. The annual cut on the Tongass Forest has increased gradually from zero at its creation in 1902 until it amounted to approximately 43 million feet in the year 1912. This entire amount has been cut for local uses, largely for boxes to contain canned salmon. The latest large sale is remarkable in that it indicates a beginning of the utilization of Alaskan timber in the general markets.

On the area on the Stikine River, for which bids have been received, the species to be cut include Sitka spruce, hemlock, red cedar, cottonwood, and yellow cedar, and the minimum stumpage rates range from $2.50 to $1.00 a thousand feet, according to species, the yellow cedar bringing the highest price. Another pulp company has made application for the other area, at the head of Thorn Arm, which contains the same species to be sold at similar prices. This company has had men examining timberlands in Alaska during a long period and over large areas, and has come to the conclusion that the Tongass timber offers the best opportunity it has seen.

The three great advantages which the paper manufacturers say they are finding in Alaska are abundant supplies of timber, cheap hydro-electric power, and tide-water transportation--all of these in one and the same locality. Both areas adjoin deep water, and it is probable that the plants will be so located that ocean freighters can be loaded right at the mills.

A cutting period of twenty years will be allowed, with two years additional for construction work. The prices may be adjusted at five-year intervals to take care of possible advances in lumber values.

# # # #

(From the U. S. Forest Service.)

OVERGRAZED STOCK
RANGES CAN COME BACK

NOT RELEASED FOR PUBLICATION
UNTIL JULY 8, 1913.

Washington, July 7.--The improved condition of the national forest range after regulated grazing is pointed to by experts of the department of agriculture as a demonstration that areas which have been severely damaged through overstocking by sheep and cattle can be brought back to their former carrying power through a system of sufficiently intelligent use.

When the government took charge of the livestock ranges within the national forests some of them were so badly overgrazed and otherwise injured from reckless handling of the stock that their grazing value appeared to have been almost entirely destroyed. Many of these ranges, however, have been restored and made as valuable as ever. On several of the forests results have more than justified the expectations and the range is in better condition than it ever was.

An example of this improvement is cited in the Nebo national forest, Utah. In 1908, when that forest was created, the ranges within the forest boundaries were found to be badly overgrazed and trampled because there was a lack of any control or

supervision over the areas. One of the areas was at that time estimated to be capable of carrying only 3,000 head of cattle. Now, through conservative management and judicious distribution of the cattle over the ranges, and improvements in water conditions, the carrying capacity of the range has been increased until, in the present grazing season, nearly 8,000 head of cattle are using this particular area, and forest officers feel that a few hundred head more can be safely grazed there without injury.

# # #

FOREST BUSINESS
BREAKS THE RECORD

NOT RELEASED FOR PUBLICATION
UNTIL JULY 28, 1913.

Washington, July 27.--The national forest business done during the fiscal year which ended June 30 surpassed all previous records. The receipts from the forests approached $2,500,000, of which about one-half was for timber, while contracts entered into for the sale of timber to be cut either at once or in later years totaled about $4,000,000. These sale contracts permit the cutting period to extend over a number of years when large bodies of timber are involved.

Under existing laws 35 per cent of the gross receipts, or between $800,000 and $900,000, will go to the benefit of the states in which the forests are situated, for schools and roads.

The records show that the volume of sales contracted for in different years fluctuates widely, with ups and downs according to general business conditions, while the actual cut has shown a fairly steady tendency to advance. In the fiscal year 1906 (July 1, 1905, to June 30, 1906), the first full year after the forest service was put in charge of the forests, the timber receipts were about $250,000, in the fiscal year 1907 something less than $700,000, and in 1908 about $850,000. In 1909 timber receipts dropped back to

less than $750,000, but in 1910 and again in 1911 were over $1,000,000, and in 1912 were nearly $1,100,000, as against about $1,250,000 for the year just closed.

Forestry officials say that the principal factor in determining how much timber will be sold in any given year is the general lumber market, which in turn depends largely on general business conditions. Thus, when indications are that a period of brisk demand is ahead, with increased building activity, railroad construction, mining development, and other forms of business expansion that call for lumber or timber, operators are seeking contracts. When business halts lumbermen naturally go slowly in the matter of committing themselves by new purchases on a large scale. But cutting under earlier purchases and small sales continues even in periods of depression. The gradual diminution of outside sources of supply and the steady development of the country, which creates increased local demands, tend to offset the effects of such periods.

As an illustration of this the figures for 1907 and the immediately following years are cited. In the fiscal year 1907 the forest service sold more timber than has been sold in any later year prior to that just closed. Contracts were made covering over a billion feet, board measure. But in the fall of 1907 came business panic, followed by inactivity. Sales in 1908 disposed of less than 400 million

feet, and in 1909 of less than 300 million. In both these years more timber was cut under sales than was disposed of through new sales. The difference was the result of cutting under the contracts of earlier years.

Last year's sales of over $4,000,000 worth of timber does not necessarily mean a prospective income from timber of this large amount in the immediate future. To bring this about there would have to be a series of big sale years. The present year may or may not see sales equal to those of the last. While general market conditions are at present less favorable to large commitments than they were six months ago, the aggressive sales policy now in force, with its opportunities for long-term purchases on fair terms where sales are possible in no other way, will probably counterbalance to a greater or less degree influences that may tend to check sales. The need of the country for national forest timber is growing and every year brings normally more of this timber within the radius of effective demand. The yearly cut and the income from the forests can reasonably be expected to rise in the future as it has been rising, however the number of sales contracts may fluctuate.

# # #

FOREST NOTES

8/1/13.

An organization of scientists who are engaged in the study of forest insects has recently been formed in Washington.

Pencil manufacturers are buying up old red cedar fence rails, in Tennessee and southward, to be made into lead pencils.

The Buffalo herd on the Wichita national forest, Oklahoma, now numbers 48, 10 calves having been born this year. When the buffalo were introduced on the Wichita in 1907 there were 15 head.

A conservation movement has been started in China, said to be richer in natural resources than any other nation. The Chinese use the word "conservancy" instead of conservation. One of their plans for the Hwai River contemplates dredging and tillage together to control floods.

The steel towers that support electric power transmission lines are being increasingly used by forest rangers as fire lookout stations on national forests. With the harnessing of the mountain streams a network of these lines is gradually being woven over the forests and in the absence of other convenient lookouts, the rangers find the steel towers helpful in their fire patrol work.

FOREST NOTES

8/8/13

A Russian scientist claims to have discovered an inoculation for use against forest insects.

There are nearly six thousand professional foresters in Germany who are associated with various technical societies.

The university of Washington has secured the use of two sections of land on the Snoqualmie national forest in connection with its forestry courses.

A tool used to fight fires on the California forests combines a rake, spade, and hoe. It is compact, so that it can be carried on horseback, and weighs less than 5½ pounds.

In an increase in timber sales this year and in a decrease in receipts from timber trespass as compared with last year, national forest officers see a growing use of the forests and respect for the federal forest policy.

# # #

FOREST NOTES

8/16/13

Twenty-two states, including Hawaii, now employ state foresters.

A 115-foot lookout tower on the Sitgreaves national forest, Arizona, just constructed by forest officers, was built entirely of logs and without the use of hoisting machinery other than ropes and tackle blocks.

Forest officers on the Payette national forest are using a compressed air drill in road work on the forest. There is considerable rock work to do and the drill saves time and money in cutting grades on mountain roads.

In an experimental test track near Janesville, Wis., an inspection just made showed that hemlock and tamarack ties put in the track without preservative treatment were decayed after 5½ years service. Those which had been treated were practically as good as when first laid.

Light burning of underbrush to remove forest litter had been practiced in India, with the idea that it improves conditions for teak growing. Now after long investigations forest officials there say that the fires are harmful, that full fire protection must be extended everywhere, and that to be really effective this protection must be continuous.

# # #

FOREST NOTES

9/5/13

Switzerland has four cooperative associations for the growing and marketing of forest products.

The U. S. forest service is using gasoline railway speeders for fire protection purposes. They follow up trains on steep grades where sparks thrown out by forced draft are likely to start fires along the right of way.

Forest officers have found that high power telescopes are not always satisfactory in fire-lookout work. In some localities heat vibrations in the atmosphere are so magnified by the glass that clearer vision can be had with the unaided eye.

At the national conservation congress to be held in Washington, November 18-20, the subject of forestry will be handled by a main committee, with sub-committees which will report on federal and state forest policies, forest taxation, fires, lumbering, planting, utilization, forest schools, and scientific forest investigations.

Elk have been found in the Uinta national forest, Utah, for the first time in many years. Since they are not from shipments from the Jackson Hole country to neighboring forests, the state and federal officials are gratified at this apparent increase in big game, as the result of protection.

# # #

9/6/13

FOREST NOTES

There are about 37 pines native to the United States, of which 25 are western species, and 12 eastern.

Paraguay has valuable forest resources, the most important of which is quebracho, particularly rich in tannin.

Much of the cork used throughout the world comes from Portugal, which harvests about 50,000 tons a year.

Germany is said to have an oversupply of foresters; so that well-educated men have hard work to secure even inferior positions.

One of the largest forest nurseries in the United States is conducted by the forest service near Haugen, Montana. It is known as the Savenac nursery and has a capacity of 4,000,000 young trees a year.

The forests of Norway are mostly in private or municipal ownership, the nation owning 28.5 per cent of the total forest area. The national forests of the United States occupy only about twenty per cent of the total forest area of the country.

# # # #

9/10/13

FOREST NOTES

Squirrels collect much of the seed used for planting by the forest service.

A growing scarcity of willow, generally used for wooden shoes in Europe, is leading to an adoption of poplar.

Torrey pine, a distinct California species, has been found in only two isolated localities in the southern part of the state.

One hundred acres on the Florida national forest will be sown to maritime pine seed this fall. Maritime pine is the source of the French turpentine industry.

San Francisco recently received its first cargo of lumber from the Tongass national forest, Alaska. The shipment consisted of 1,500,000 feet of Sitka spruce.

Three native species of larch furnish timber in the United States. One grows in New England and the lake states, another in the Pacific northwest, and the third in the high mountains of the northern Rockies. European larch has been planted extensively in the prairie states.

* * *

Two million trees will be planted on the national forests in Utah, Nevada, and southern Idaho during 1914.

Makers of small hickory handles for hammers, chisels, and the like, are now trying to use the waste from mills which make hickory spokes and pick and ax handles.

There is much waste in getting out the flawless white oak necessary for tight barrel staves. The forest service is trying to get manufacturers of parquetry flooring to use some of this waste.

The U. S. consul at Aberdeen, Scotland, thinks that American manufacturers may have a chance to compete in furnishing staves for fish barrels. There has been a recent rise in the price of spruce and fir staves from Sweden and Scotland.

Four new state forests have recently been added to those in Hawaii, making 27 in all, with an aggregate of 683,101 acres. Of this amount, 67 per cent belongs to the territory, the rest being private land administered by the territorial forest officers.

# # #

9/30/15

FOREST NOTES

Washington stands first in lumber production, with Louisiana second.

It is said that 90,000,000 broom handles are used annually in the United States; one for each man, woman, and child.

The lands burned over during the terrible fires on the Idaho national forests in 1910 are now largely covered with a thick growth of young tree seedlings, by natural reseeding.

Manufacturers of artificial limbs are seeking substitutes for English willow, used because of its combined lightness and strength. It is claimed that the Port Orford cedar of the Pacific Coast will prove equally serviceable.

In the open yellow pine forests of Washington and Oregon a collapsible plow is being used in digging fire lines to stop surface fires. The plow can be dismantled and folded into a compact form, so that it can be packed on horseback, and weighs only 40 pounds. When in use, one man with a horse can do the work of 20 or more men working with shovels.

# # #

(From the Forest Service, U. S. Department of Agriculture.)

EXAMINATION FOR

ASSISTANT FOREST RANGER

NOT RELEASED FOR PUBLICATION
UNTIL SEPTEMBER 25, 1913.

The United States civil service commission announces an examination for assistant forest ranger on October 21 and 22. In field district No. 5 of the forest service the examination will be held in California at Alturas, Bakersfield, Bishop, Chews Ridge, Hot Springs, Los Angeles, Nevada City, Northfork, Placerville, Quincy, Red Bluff, San Diego, Santa Barbara, Sisson, Sonora, Weaverville, Willows, and Yreka; and in Nevada at Gardenville.

Candidates must be able-bodied men between the ages of 21 and 40, capable of enduring all the hardships of outdoor life. A medical certificate to this effect is required. The examination consists of two parts, a field test and the answering of practical questions. The latter relate to land surveying, timber estimating, lumbering, land laws, mining, and the livestock business. Practical experience and general intelligence, as shown by ability to write with reasonable clearness of expression, are the main requirements. Applicants must be residents of the state in which they seek employment, and should be familiar with local industrial conditions and topography.

From the list of successful candidates, the government selects new men for the forest service, who are appointed as assistant forest rangers, at $1,100 yearly salary. They are eligible to promotion later to higher grades, including vacancies in the position of deputy supervisor and supervisors.

These field men - rangers and assistant rangers - transact the business of the national forests under the direction of the supervisors. They conduct the government's grazing business, handle small timber sales, build roads, trails, telephone lines, and cabins, fight forest fires, and estimate timber.

When necessary the ranger must own and maintain his own saddle and pack animals. Rangers permanently assigned to a forest are provided with headquarters consisting of cabins, barns, and sheds and with some agricultural land to grow food for their families and domestic animals.

The government in announcing the present examination calls attention to the fact that appointment in the forest service does not guarantee yearlong employment, since it is necessary to furlough a number of rangers during the winter months when their services are not needed on the forests. Preference is given, however, to furloughed employees whose services are satisfactory in recruiting the force at the beginning of a field season.

Applicants can secure information concerning the examination from the U. S. Civil Service Commission, Washington, D. C., or from forest supervisors, at the places named.

# # #

9/26/13

FOREST NOTES

The railroads of the United States use about 150,000,000 wooden ties each year.

Cadillac, Mich., is reported to be the foremost city in the country for varied and close utilization of forest products.

More than one-fourth of all the sheep in the eleven states nearest the Pacific coast are grazed on the national forests.

The national forests contain water powers with an aggregate estimated capacity of 12,000,000 horse-power, available for use under permit from the secretary of agriculture.

Much of the piling, wharf material, and lock gates of the Panama canal are made of greenheart, said to be the most durable wood known for these purposes, which comes mainly from British Guiana.

The western forestry and conservation association will hold its annual conference about December 15. This year it will meet at Vancouver, B. C., and will give its main consideration to the problem of forest fire prevention and control.

# # #

(From the Forest Service, U. S. Department of Agriculture.)

FEDERAL COOPERATION FOR GOOD ROADS

NOT RELEASED FOR PUBLICATION UNTIL OCTOBER 9, 1913.

Secretary Houston of the department of agriculture says that the state and federal governments should work together for highway improvement in order that a large proportion of the money annually spent for road construction may not be wasted.

In his own department the office of public roads has been demonstrating the value of proper road building by the construction of certain object-lesson roads, and the forest service is carrying out his idea of national and state cooperation in road building. The law requires that ten per cent of the gross receipts from the national forests shall be spent in the states in which the forests are situated. This money is expended for road improvement under direct control of the secretary of agriculture.

The amount appropriated under this act, based on the receipts of the national forests for the fiscal year ending June 30, 1913, is $234,638.68. From the 1912 receipts for this ten per cent road item, there is an additional $134,831.10, which is still available.

In administering the ten per cent road fund, forest officers charged with the actual plans and expenditures in the neighborhood of their forests have, in almost all cases, secured an equal or a larger cooperative fund from state authorities for the building of certain pieces of road.

With the money thus expended many important roads are being built or put in repair. One on the Wyoming national forest, six miles long, makes accessible to farmers a large body of timber and opens up a region of great scenic beauty. In northwestern Arizona, part of the fund will be used in connection with the LeFevre-Bright Angel road, important because it makes accessible to tourists the Grand Canyon of the Colorado. In one place, the Ocean to Ocean Highway crosses the Apache national forest, Arizona, and on this project the forest service and the local authorities cooperated enthusiastically. On the Florida national forest in western Florida steel bridges and graded roads have, under the stimulus of this fund, taken the place of corduroy, bog, and sand.

This federal road fund is now available in all national forest states of the west. Just as fast as returns come in, the forestry officials say, a similar fund will become available in states in which eastern national forests are being secured.

# # #

FOREST NOTES

10/17/13

Siam exports about nine million dollars worth of teak a year.

The Automobile Club of America, through its bureau of tours, is urging automobilists to use care with fire in timbered regions.

Oils distilled from the needles of spruce and fir trees are being used to scent petroleum floor oils which are sometimes objectionable on account of their odor.

The governor of Iowa has set aside a fire-prevention day, urging that the citizens discuss conditions and create a sentiment against forest fires and other conflagrations.

The average area administered by a ranger on the federal forests of the United States is about 100,000 acres. In Germany the area administered by a man of equivalent rank is about 700 acres.

The republic of Colombia is said to have excellent regulations for its national forests. Lumbermen who take cedar and mahogany are required to plant young trees of the same species in the cut-over spaces.

# # #

FOREST NOTES

10/25/13

Canada cuts about 2 million cords of pulp wood annually, about half of which is exported for manufacture in the United States.

It is claimed that some of the eucalypts of Australia are taller than the California redwoods, hitherto considered the highest trees in the world.

There are 55 oaks in the United States, about evenly divided between the east and the west. The eastern species and particularly white oaks are the most valuable.

The bureau of forestry of the Philippine Islands will send tropical timbers to the U. S. forest service so that their suitability for fine furniture veneers may be ascertained.

Wood block paving, tried and discarded in many cities of the United States thirty years ago, is now coming back into marked favor, due to improved methods of treating and handling the blocks.

German foresters are experimenting with Douglas fir from the United States trying to find a variety which will combine the fast-growing quality of the Pacific Coast form and the hardiness of the Rocky Mountain form.

# # #

FOREST NOTES

10/31/13

To secure a merit badge in forestry, boy scouts are required, among other things, to identify 25 kinds of trees.

One of the principal by-products of the national forests of Japan is furnished by mushrooms, which have yielded in one year a revenue of a million dollars.

Articles of clothing from wood fiber are being made in Europe. The material for a suit costs about fifty cents. Clothing made of this material, however, can not be washed.

One of the largest and most valuable timber trees of the country is the tulip tree, known to lumbermen as yellow poplar. It is related to the magnolias, but is the only tree of its kind in the world.

The largest tree in the United States is said to be the "Mother of the Forest," a giant redwood in the Calaveras bigtree grove in California. It is supposed to contain 140,619 board feet of lumber. There are, however, many claimants for the honor of being the "largest tree" and the "oldest tree," and these claims, according to foresters, can not always be verified.

# # #

FOREST NOTES

11/21/13

Eastern manufacturers are looking to the northwest for hardwoods for the manufacture of clothes-pins. Birch is particularly wanted.

The Panama canal commission has requested the forest service to inspect the timber being creosoted at Seattle and Tacoma for the commission.

The net receipts from the national forests of Washington and Oregon during the past four months amounted to $115,620, an increase of 17 per cent over receipts for the same period last year.

Of the two million trees to be planted on the national forests of Montana and northern Idaho during the present fiscal year, one-half have been set out this fall and the rest will be put in next spring.

A thoroughly up-to-date sawmill with a capacity of 60,000 board feet a day has been erected, on the south coast of Mindanao island. It is of American make throughout, and uses the modern bandsaw. This is only one of several such mills in the Philippines.

# # #

(From the Forest Service, U. S. Department of Agriculture.)

GRAVES ADVOCATES FEDERAL CONTROL OF FORESTS

RELEASED FOR AFTERNOON OF NOVEMBER 19, 1913.

Washington, Nov. 19.--Henry S. Graves, U. S. Forester, spoke before the National Conservation Congress in session today, dwelling particularly on the present policies of the government in respect to the activities of the forest service. Referring to the attitude of the present administration, as to the so-called states' rights policy, which has advocated state instead of federal control of forests, Mr. Graves says there is no thought of any change in the established system of federal ownership and control.

The Forester spoke in part as follows:

"The nation has an important stake in forestry. Here as in all other countries, the real development of forestry began when the government took up its practice. Even today some persons would leave the forests entirely to private owners, others insist that the public phases of forestry are altogether a state function and federal activities in this field uncalled for. Those who hold this view are usually either lukewarm concerning the need for forest conservation or opposed to restricting private activities. Yet unrestricted private exploitation of forests is impossible if we are to continue to have the forests that the nation needs.

"National responsibility in forestry is perfectly clear-cut. There need be no confusion with an equally clear-cut responsibility of the states. And as to private forestry little of value has so far been done that has not been an outcome of public action through state or federal agencies, or both. The national work will always be the backbone of American forestry, not trenching or or interfering with state work or individual efforts but serving as a guarantee that national needs which individual states can not meet will be provided for on a national scale.

"Underlying the forestry problem are two fundamental considerations which should be emphasized and reiterated until thoroughly driven home. One is the public character of forestry. Both in the matter of a continued supply of forest products and in that of the conservation of water resources the public welfare is at stake. Secondly, stability of policy and permanence of ownership are essential to any successful attack on this great conservation problem.

"I am frequently asked as I travel about the country whether I am going to make important changes in forestry policy. I was asked that very often in 1910, when I first took office. I am asked it often this year. My answer is that what we are seeking is not changes but the development of a permanent public enterprise with consistent and stable policies. The national forests were set aside in the recognition that the bulk of these lands should be handled permanently under public protection and control.

"The aim of the present administration is not to overturn, but to take every possible step to increase efficiency of the organization, to adjust difficulties, and to advance as fast as possible the purposes for which the national forests were established. Secretary Houston recently said to me:

"'Establish permanent boundaries. Classify your lands; segregate the agricultural land and fix right limits for what is needed as protective and productive forests. Develop permanent policies based on full recognition of lasting public interests, and settled forestry practice fitted to the individual needs of each forest and locality. Study efficiency; make any changes necessary for this purpose, but make no changes that are not clearly called for in the public interest. Carry out your plans for the development and increasing use of the forests; but, above all, make each forest work for community upbuilding and local as well as general welfare. We must always have in mind the men and women who are building up a new country and laying the foundations for prosperous, thriving commonwealths. We must try to study their needs and see where and how the forests can help them. But we must not cease to guard effectively against the evils of private privilege and monopolistic control of resources now the property of the public.'"

# # #

11/29/13

FOREST NOTES

The forests of Florida contain 175 different kinds of wood.

There are seven spruces in the United States. Four are confined to the west; two to the east; while one, white spruce, has a continent-wide distribution.

Sawmill waste of Douglas fir, of which an enormous quantity is found in the western forests, is being used to make paper pulp by a mill at Marshfield, Oregon.

In proportion to its weight, California redwood is the strongest conifer so far tested at the U. S. forest products laboratory. This strength is due to its long wood fibers.

The Philippine bureau of forestry reports that American and European lumbermen are trying to secure large and regular shipments of Philippine woods, mainly for cabinet making.

Experiments with various chemical extinguishers for fighting national forest fires have not been very successful. The unlimited supply of oxygen in the open, forest officers say, tends to neutralize the effect of the chemicals.

# # #

12/6/13

FOREST NOTES

Twenty states have published reports of their wood-using industries.

A good grade of excelsior is being made from fire-killed Alpine fir and Engelmann spruce in Colorado.

It is predicted that western yellow pine will furnish an excellent source of turpentine as the southern pine becomes exhausted.

While there are five hemlocks in the United States, only two are of any commercial importance, common hemlock and western hemlock. Of these two western hemlock makes the better lumber.

The Philippine bureau of forestry uses a launch for service between islands. The U. S. forest service employs several, both on inland lakes and in salt water, in Alaska and Florida.

Trunk manufacturers in Colorado are abandoning the usual basswood and cottonwood for the trunk box, and are turning to Engelmann spruce, which combines lightness, strength, and ease of working.

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FOREST NOTES 12/15/13

The forest products laboratory at Madison, Wisconsin, has made 4,000 tests on the strength of American woods.

The gathering and selling of acorns is a new industry, in Arkansas, to supply eastern nursery firms with material for forest planting.

Thirty different wood preservatives are in commercial use in the United States; many of them utilize creosote of one sort or another; others require chemical salts.

Last year the forest service distributed 116,000 basket willow cuttings: 15,000 to forest schools, 20,000 to agricultural experiment stations, and 81,000 to individuals.

More than 800,000 horsepower has been developed from streams on national forests under government regulation. This represents the output under conditions of lowest streamflow.

Florida buttonwood, a tree confined largely to the keys along the south coast, is very highly prized for use in cooking on ship's galleys. It burns slowly with an even heat and makes but little smoke or ash.

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12/20/13

FOREST NOTES

There are 703 bighorns or mountain sheep in the national forests of Nevada.

In 26 states there are state foresters who cooperate with private timberland owners in solving forest problems.

The forest service maintains nine experiment stations for studies in reforestation and similar subjects.

The bureau of entomology and the forest service, working together for the control of forest insects, last year covered more than 160,000 acres in their operations.

A national arboretum is being established in Rock Creek national park, District of Columbia. Eventually it will contain all American tree species which will thrive there.

The total amount of land purchased in the eastern states for federal forests is nearly 800,000 acres. So far the principal work on these areas has involved their protection against forest fires.

# # #

12/27/13

FOREST NOTES

The forest service collected 40,000 pounds of tree seed last year for use in reforestation work. The total area reforested was about 30,000 acres.

There is promise of a large turpentine industry in the west and southwest, the raw product being supplied by the resinous gum of western yellow pine.

German pencil manufacturers are looking to California incense cedar for pencil wood. The establishment of a pencil factory in California is not improbable.

More than 120 million board feet of timber was given away free by the government last year to settlers and miners living in or near the national forests.

There are 16 maples in the United States, most of them being eastern species. The most valuable, not only because of the product of its sap but also of the lumber, is sugar maple.

It has been demonstrated that over-grazed stock ranges on the national forests can be brought back to use under a system of regulated grazing faster than if they are left unused.

# # #

(From the Forest Service, U. S. Department of Agriculture.)

COURT SAYS FEDERAL POWER IS
SUPREME ON FEDERAL LANDS

The contention of the government that power companies can not secure rights of way across national forests without complying with the regulations of the secretary of agriculture has been completely sustained, according to the officers of the forest service, by the opinion of the circuit court of appeals filed on November 14 in the case of the United States versus the Utah Power and Light Company.

In its decision, the court announces that congress has assumed complete control of the water-power question, so far as the public lands are affected, and that a state in the exercise of its sovereign authority can not interfere with or transcend this constitutional power of congress.

Since December 15, 1900, the Utah Power and Light Company has operated its hydro-electric power works on certain public lands in the state of Utah, now forming a part of the Cache national forest. The federal government sought to enjoin the occupancy of these lands until the company should comply with the provisions of the Act of May 14, 1896. This act empowered the government to permit the use of, or rights of way upon, public lands and national forests, for the purpose of generating, manufacturing, and distributing electric energy.

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The power company, on the other hand, alleged that its rights were secured and protected by the Act of July 26, 1866, now Section 2339 of the Revised Statutes. The decision of the court is that the later act repeals that of 1866, insofar as it related to the subject of electric power and that the company must acquire its rights of way in accordance with the provisions of the later act.

It was contended by the company that it was protected in its tenure by the laws of the state of Utah. On this point the court says, "The proposition that absolute and perpetual rights in the public lands may be acquired for private gain by mere appropriation, without purchase or compensation, and in the exercise of a state sovereignty which transcends the constitutional power of the Congress, is a somewhat startling one."

Shorn of its legal phraseology, the court's decision may be summed up as follows: That the constitution provides that Congress has the power to dispose of and regulate the use of the territory belonging to the United States, and that the people of Utah, in forming their constitution and state government, forever disclaimed all right and title to the public lands within their state until these have been disposed of by the government. The terms of this provision were later made a part of the constitution of the state of Utah, and the federal

government, therefore, was secured in the full control of the public lands within the state, not only by the federal constitution but by that of the state itself.

Moreover, the Act of May 14, 1896, which specifically provides for federal regulation of electric power on government lands, was passed before the Utah Power and Light Company claimed any rights under the Act of 1866. Therefore, since the power company has not availed itself of the provisions of the later statute which provides for a permit, "its rights, if any, are subordinate to those of the Government".

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(From the Forest Service, U. S. Department of Agriculture.)

LUMBERING GREATEST
MANUFACTURING INDUSTRY

NOT RELEASED FOR PUBLICATION
BEFORE THE AFTERNOON OF
NOVEMBER 20, 1922.

Washington, November 20.--According to E. T. Allen of Portland, Oregon, lumbering is the greatest American manufacturing industry and is exceeded only by agriculture in supplying the essentials of life. In an address before the conservation congress today Mr. Allen called attention the comparative lack of the public's knowledge of the economics of subjects which touch each individual so closely as forestry and lumbering.

Mr. Allen is forester of the western forestry and conservation association, an organization of lumbermen whose principal activity is the protection of their holdings from fire. A large part of the association's efforts are directed to making the public realize the loss which each individual suffers, directly and indirectly, from forest destruction. In this connection he pointed out that forest preservation can not be conducted wholly by business managers or boards of directors. "It is a mutual cooperative enterprise," he said, "requiring daily participation by all concerned. The American forest policy must exist not because a few say it should, but because a majority of citizens understand what is needed and why it is needed and put the policy into effect."

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"The only reason the average citizen does not realize the importance of forestry and does not give it the same active and intelligent interest that he gives his home town problems is that he can not see it so clearly. The very immensity and importance of the lumber industry causes its several processes of growing, manufacturing, and distributing to be conducted separately, and this confuses the public mind. Different communities see different parts of the whole process, but get no thorough grasp of forest economics.

"In many a little German village the whole community sees the forest grown, cut, manufactured, and used. Those who do not actually participate serve or supply those who do. Their forestry needs no propaganda. The people could not understand the need for it any more than of propaganda for raising wheat and making bread.

"We talk too much about forests as though they were an end in themselves. We might just as well talk only of land when trying to improve agricultural conditions, or of water when urging the protection and propagation of food fishes. The average citizen must be brought to consider all forest production and all forest use as little or no different from the production and use of any necessary crop, obviously to be encouraged and stabilized on a permanent basis profitable to all concerned. Whether he is a private citizen or a law maker serving

private citizens, he must be familiar with all the factors. As long as he thinks an uncut forest is forestry, and that such forestry is good and all lumbering bad, there will be no real progress.

"There is little trouble in passing laws for the protection and advance of agriculture, horticulture, and dairying, because people understand the governing conditions of these industries and see the point of such laws readily.

"To succeed in the United States forestry must be so closely allied with lumbering that neither forester, lumberman, nor public makes any distinction. This being true, the need is to teach the principles of the business from start to finish. Every process, its cost, and its relation to other processes and to the final price of the product should be common knowledge. The education of the public along these lines is the greatest need in forestry today."

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(From the Forest Service, U. S. Department of Agriculture.)

TIMBER SUPPLY MUST DEPEND ON PRIVATE FORESTS

NOT RELEASED FOR PUBLICATION BEFORE AFTERNOON OF NOVEMBER 19.

19??

Washington, Nov. 19.--After the remaining virgin timber of the United States is exhausted, forest supplies will have to come from national forests, state forests, or from privately-owned land; but federal and state forests, according to E. A. Sterling, Director of the American Forestry Association, who addressed the national conservation congress this afternoon, constitute only one-fifth of the total forest area of the country.

"On private lands," he says, "the timber of the future will be either such growth which has sprung up voluntarily on cut-over land and has managed to escape fire, or that from areas which have been devoted to forest production as a business enterprise. So far the practice of private forestry has been mainly confined to small operations, often more for pleasure than for profit. An intensive forest policy on a scale large enough tomestablish its commercial feasibility has not yet been undertaken.

"Private forestry in the United States has been retarded by many influences among which the more important are large stored-up timber supplies, comparatively low stumpage and lumber values, lack of market for many minor forest products, and a public sentiment which has not realized that forest production is essentially the growing of successive crops.

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"Present tendencies in private forestry indicate a more logical development than at any time since forest conservation became an issue. Instead of attempting to put immediately into effect complete policies and an intensive management which are scientifically correct, the things now being attempted are the logical steps which will ultimately lead to systematic, long-time management of private forest lands. The private owner is learning that fire protection is possible and that it pays. With this fact established, other things will be taken up and worked out until the progressive timberland owner will find that he is practicing the kind of forestry which pays in this country.

"In a word, private forestry, as it can be properly practiced in the United States today, is not the intensive forestry of Germany, but the application of protective and close utilization measures with provisions for natural regeneration. These principles, applied as economic conditions permit, will build up the art and practice of forestry in America."

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(From the Forest Service, U. S. Department of Agriculture.)

NATIONAL ORGANIZATION TO STUDY FOREST INSECT PROBLEM

NOT RELEASED FOR PUBLICATION UNTIL DECEMBER 15.

Washington, December 15.--The enormous losses due to forest insects have led to the formation of a society for the advancement of forest entomology in America. The members of this society hold that the work of insects has not received the attention which it deserves.

Henry S. Graves, U. S. forester, the newly elected president of the society, on being asked about the purposes of the organization, said that they were, in general, to call attention to the part which insects play in forest problems. "We have had," he said, "widespread and specific interest in insect pests such as the San Jose scale and the boll weevil, which affect all of us as to what we eat and what we wear. Forest insects through their destruction of timber increase the cost of a necessity which enters quite as much into the daily life of the individual as do the products of the field and orchard. If the importance of the protection of our forest resources from insect depredations is generally recognized, a large part can be prevented or avoided.

"Right now in the national forests the bureau of entomology and the forest service are cooperating to stop insect ravages by discovering their beginnings, and stamping them out. A few isolated trees attacked by insects may form

the nucleus of a mountainside devastation quite as serious as that from a forest fire. The opportunity for combatting insects, however, is in one respect better than that in the case of a fire, which runs rapidly, because it takes several years for an insect devastation to spread until it becomes of such proportions as that which overspread the yellow pine forests in the Black Hills in 1906. Watchful care on the part of forest officers, lumbermen, and private individuals will make it possible to catch these infestations before they get a good start. By cutting and burning the trees, or stripping off the bark, the insects can be killed. As in all such cases, an ounce of prevention is worth a pound of cure."

"Who make up the membership of the organization?" was the next question asked of Mr. Graves.

"It is open to any one interested in the subject," Mr. Graves replied. "It seems to me that the relation of forest insects to forest protection touches almost every one. Of course we expect that new members shall be recommended by the present membership, which is made up largely of persons who have studied the forest insect problem at first hand. In order, however, that the objects of the society shall be kept foremost, it is required that at least four of the seven officers must be chosen from among professional forest entomologists. It is expected that honorary vice-presidents representing federal, state, and private interests will be

elected to promote the objects of the organization in many localities through the country."

"How will these objects be attained?"

"In the first place, the objects of the society are largely educational. As in all questions of large public importance, the main idea is to give the public an opportunity to know just how important they are. In the second place, the society will form a clearing house for information, and its meetings will discuss the most advantageous methods of insect control. Take, for example, the ravages of the gypsy moth and the brown-tail moth in the northeastern states. If we can bring about a general knowledge of these insects and of the harm they do, and are able to instill into the mind of the individual the necessity for and the proper methods of their control, how much easier it will be to combat them than when the work is confined only to governmental agencies!"

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(From the Forest Service, U. S. Department of Agriculture.)

PROGRESS IN FORESTRY DEPENDS ON THE PUBLIC

NOT RELEASED FOR PUBLICATION BEFORE AFTERNOON OF NOV. 17.

Washington, November 17.--"Progress in forestry depends more upon what the public permits than upon what foresters and lumbermen perform." This is a conclusion of the forestry committee, as expressed at the conservation congress today.

"As a consequence," the committee goes on to say, "public education is of prime importance, and the best methods of educating the public demand special study. Since no one else has the interest or the requisite forestry knowledge, foresters and lumbermen must learn this trade or profession in addition to their own.

"It is not forests, but the use of forests, which we seek to perpetuate and therefore to be sound and convincing education must include a knowledge of the lumber business."

In presenting some of the educational devices the committee commended particularly the booklets gotten out by various forest fire protective associations. Another device is a paper drinking cup to be folded by children, each fold telling a pictured story of the growth of a forest fire, and of the evils of its effects. Still another is a match box legend which points out that while a match has a head it cannot think for itself, but is dependent on the thought of the user to keep it from doing harm in the woods.

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(From the Forest Service, U. S. Department of Agriculture.)

LIVESTOCK INCREASE ON
NATIONAL FOREST RANGES

1913

A marked increase in the quantity of livestock grazed on national forest ranges during the past fiscal year is reported by the forest service. Nine and a half million domestic animals have been occupied during the summer in converting one of the by-products of the forests into meat, hides, and wool. In addition, there were in round numbers three hundred thousand calves and colts and five million lambs and kids exempt from permit and therefore not enumerated.

According to the figures gathered, the amount of stock grazed under permit during the year is over four per cent greater than for the previous year, while the number of permittees using the forests for pasturage purposes was increased from 26,501 to 27,466. The total receipts by the government from grazing fees for the twelve months ending June 30, 1913, were $1,007,739, and the portion of this applied to schools and roads in the states in which the national forests are situated is about $352,708.

Grazing is second only to lumbering as a principal use of the national forests. Practically all of the national forests used extensively for grazing purposes are within the eleven states extending east from the Pacific Coast, known as the "far western group." These states contain, according to

latest reports, 8,546,000 cattle, 2,810,000 horses and mules, and 28,366,000 sheep. The national forests support in these states 17 per cent of the total number of cattle grazed, 3.48 per cent of horses and mules, and 27.5 per cent of sheep.

It is estimated that the annual product of these animals is 300,000 head of beef cattle of various ages and grades and 5,000,000 head of lambs and mutton sheep.

Since the average net meat weight of a beef animal is 515 pounds, of a lamb 37 pounds, and of a sheep 52 pounds, the stock grazed on national forests in the eleven far-western states produce annually about 155 million pounds of beef and 312 million pounds of mutton. In addition, it is said the wool grown totals 55,000,000 pounds, hides approximate 300,000 in number, and pelts 5,000,000.

This output, according to the forest service, does not involve any material sacrifice of forest or watershed protection or permanent forage productivity on the national forests. The system of range management applied by the government has proved, it is claimed, effective and simple, and the quality and quantity of the national forage crop is said to be improving each year.

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(From the Forest Service, U. S. Department of Agriculture.)

GRAZING REGULATIONS

UPHELD BY STOCKMEN

There were only 144 cases of grazing trespass on the national forests during the past fiscal year, according to a report issued from the forest service. The service considers this remarkable, in view of the fact that the national forests contain 138,000,000 acres and have boundaries many thousands of miles in length. Nearly 32,000 grazing permits were issued, and more than 20,000,000 head of domestic animals grazed upon the forests for periods from a few days, in crossing, to a whole year.

The various forest officers in charge of the areas on which this stock grazed are much pleased by this record, because it reasonably might be assumed that it would be extremely difficult to protect this large area from the encroachments of live stock and from depredation of various sorts. A large part of the difficulty, however, is obviated by the ready cooperation of the stock owners who use the range.

Of the 144 cases where the departures from the regulations of the department of agriculture were considered serious enough to warrant the filing of a trespass charge, 20 were dismissed by the department because of a lack of proof. The department points out that, while there were of course a great many minor violations due to a lack of knowledge or a misunderstanding of the regulations, they were settled without difficulty through the issuance of permits to cover the cases or by personal conferences which were sufficient to prevent further trouble.

(From the Forest Service, U. S. Department of Agriculture.)

CHINESE REPUBLIC STUDIES

OUR FOREST METHODS

David Z. T. Yui, formerly secretary to the vice-president of the Chinese Republic, is now traveling in this country to learn modern methods for adoption in China. He is at present in charge of the lecture board of the Chinese Y. M. C. A., which is in close touch with the new government and is aiding in putting into effect an educational campaign for the citizenship of the republic.

While in Washington recently Mr. Yui spent some time investigating the work of the forest service, in order that he might find out whether its organization and methods would be of value to the newly created department of agriculture and forestry in China. In speaking of this part of his work, Mr. Yui said:

"In the matter of forest conservation the United States profited much by looking upon the disasters which were the result of the Chinese neglect of forestry. This was a great warning to you. Now we wish to profit by the improved methods of forestry which the United States has discovered and applied."

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(From the Forest Service, U. S. Department of Agriculture.)

COLORADO MARBLE

FOR LINCOLN MEMORIAL

The white marble of which the great $2,000,000 Lincoln memorial temple is to be built on the banks of the Potomac in Washington is to come from the Sopris national forest, Colorado.

This is said to be the first great building in the east to be constructed of this stone, known to the building trades as Denver marble, though much of it has been used as an interior finish in public buildings. In the west a notable example of its use is found in the new federal building at Denver.

While the marble quarries are in the midst of the national forest, they are on private land secured under the laws by which areas bearing deposits of building stone are disposed of by the government. Under the law prospectors can locate and secure title to mineral deposits on the national forests just as they can on the open public domain. The marble company which owns the quarries is a large user of national forest timber in the working of its properties, situated near Marble, Colo.

The history of the company is said to be of considerable interest, as representing indomitable enterprise against difficulties. The country in which the marble deposits occur is extremely rough and precipitous, and for a long time was inaccessible because of a lack of transportation facilities. Large sums had to be expended before the stone could be got out and brought to market. Up to 1907, when the product first began to attract attention, it is said that $1,200,000 had been expended in developing the property.

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(From the Forest Service, U. S. Department of Agriculture.)

WASTE FROM DESKS

GOES INTO BRUSHES

Waste wood in the manufacture of school desks is now being used for the backs of cheap brushes, according to the statement of the forest service.

A large manufacturer of school desks in Michigan had a considerable amount of waste material in sizes which were too short to enter into the manufacture of the smallest desks, and could not be utilized further with his machinery or in his line of work. This material was all hard maple in pieces an inch thick, a foot or so long, and about three inches wide; for a long time it had been consigned to the waste pile and sold as fire-wood. This waste amounted to from one thousand to fifteen hundred board feet each day. A nearby manufacturer was using practically this quantity of maple, which he was sawing up into small pieces for making the backs of cheap brushes.

Members of the forest service, investigating methods of eliminating factory waste, conceived the idea that the blocks used by the brush factory could be readily secured from the waste of the school desk manufacturer, and on this basis got the two together. Arrangements were made so that the brush manufacturer now places orders with the other firm for its raw material and what was formerly waste is now a source of profit.

(From the Forest Service, U. S. Department of Agriculture.)

WOODEN SHOES MADE
IN THE UNITED STATES

In this country beech is the favorite material for wooden shoes, the manufacture of which has reached considerable proportions in the United States according to the department of agriculture, which has just issued a bulletin on the use of the wood. These shoes, the department says, cost from 60 to 75 cents a pair and are good for two years. They are worn by those who have to work in cold or wet places, such as tanneries, breweries, and livery stables, and by workmen in steel mills and glass factories who must walk on hot grates or floors. Farmers, too, are classed among the users.

Beech wood is put to a very much wider range of uses than the average person would be likely to suspect. The department says beech enters into hundreds of articles from hobby-horse rockers to butchers' blocks. We walk on beech floors, eat off beech picnic plates, carry beech baskets, play with beech toys, sit on beech chairs, and in dozens of other ways use articles made of beech almost every day of our lives. Its freedom from taste fits the wood especially for articles which come in contact with foodstuffs, and beech meat boards, skewers, lard tubs, butter boxes, sugar hogsheads, refrigerators, dishes, spoons, and scoops are widely used.

Only one species of beech grows naturally in the United States, but few trees in this country have a wider commercial range. It extends from the Gulf of Mexico into eastern Canada, and in practically every place where it grows it is cut for market. The total yearly output of beech wood in the United States is approximately 500 million board feet.

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(From the Forest Service, U. S. Department of Agriculture.)

MANY USES FOR
BIRCH ARE RECORDED

From furnishing material for a canoe in which to hunt whales some hundred odd years ago to supplying New England factories of today with 11,000 cords of wood annually for shoe pegs and shanks is, according to the department of agriculture, only part of the services the birch tree has rendered and is rendering the people of America.

Sir Alexander Mackenzie, the department tells us in a bulletin just issued on the uses of birch, hunted whales in a birch bark canoe. The animals were found at the mouth of the Mackenzie River. He failed to strike the game, and concluded that it was probably for the best. While the canoes are frail, it is pointed out that the bark of which they are made resists decay longer than any other part of the tree.

It would be difficult, the department goes on to say, to estimate the value of the service of the birch bark canoe in the discovery, exploration, development, and settlement of the northern part of this continent. From the Arctic Circle to the Great Lakes, and southward, for a century and a half, that light but exceedingly strong and serviceable vessel threaded the lakes and rivers, bearing trade and carrying civilization where no other boat could go. The French explorers and missionaries made journeys of hundreds of miles in these canoes, often carrying cargoes which would seem beyond the capacity of such frail vessels.

The range of uses to which birch wood is put is surprisingly large. According to the department, the articles into which it goes range from church pews to kitchen tables, and from organ pipes to newel posts. We may have our first sleep in a birch crib and our last in a birch coffin. The spools on which we get our cotton and silk thread are birch spools, and the lasts on which our shoes are made are likely to be birch lasts. The largest of the spools hold 12,000 yards, the smallest 20 yards. The wood's beauty, strength, and rigidity make it prominent as a material for musical instruments, and the same qualities bring it into extensive use for flooring.

Many people have an idea that shoe pegs have nearly passed out of use, but the amount of birch previously mentioned as made into pegs and shanks yearly in New England seems to disprove this notion. Birch, the department says, is often put on the market in imitation of other woods, and we may open many a door, sit on many a chair, and write on many a desk which we imagine to be mahogany, but which is really birch stained to resemble the genuine article.

Nine species of birch grow in the United States, but sweet, yellow, paper, and river birch are those most used. About 45,000,000 board feet of the wood finds its way to the market yearly. Paper birch is one of the few American species with a hold on the forest stronger than it had when America was discovered. Large tracts are now covered with this birch where there was little of it a century ago. It comes in after fire, and some tracts it has taken possession of cover hundreds of square miles.

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FOREST NOTES

The national forests of Chile cover about 7,000,000 acres.

The forest service of India has demonstrated that teak wood grown in plantations is just as strong as that grown in natural forests.

Even the well-protected forests of Germany are by no means immune from fire, and the Prussian fire protect on system makes use of lookout towers and telephones.

Much of the so-called silk nowadays is made of wood. Germany produces more than one million pounds of this cellulose silk, worth $1,500,000. A ton of wood worth $10 yields cellulose worth $20, and this cellulose yields silk worth $350.

Army bayonets now form part of the emergency telephone outfit of forest rangers, used chiefly in fighting fires. This emergency line consists of small instruments and a coil of fine copper wire. The wire is attached to the nearest telephone line, the bayonet is thrust into moist ground at the other end, and with the circuit thus completed the ranger can talk with headquarters, report his position, and summon fire fighters if necessary.

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(From the Forest Service, U. S. Dept. of Agriculture.)

GOVERNMENT BUFFALO HERD

IS INCREASED

The birth of 10 calves in the buffalo herd maintained by the government on the Wichita national forest and game refuge, near Lawton, Oklahoma, has been reported by the game warden in charge. The herd now contains a total of 48 head of full blooded buffalo, or, more properly, bison, of which 27 are males and 21 females. All of the animals are in splendid condition.

In 1907 the American bison society donated to the federal government a nucleus herd of 15 animals which had been bred and reared in the New York zoological park. The animals were transported to the Wichita national forest which is also a game refuge and placed under the care of the Forest Service. They readily adapted themselves to their new habitat, but the area upon which they were placed was within the zone affected by the Texas fever tick and during the two or three years following their transfer only the constant care and watchfulness of the forest officers prevented the complete loss of the herd.

The animals were examined almost daily to determine whether they had become infested with Texas fever ticks and were placed in specially designed cages and sprayed with crude

oil at intervals of from 15 to 30 days, but notwithstanding the extreme precautions which were adopted 3 of the animals died. Gradually, however, the enclosures in which the buffalo were confined were freed from fever ticks and there is a possibility that as the buffalo adapted themselves to their new environment they became more or less immune to the disease. No losses from Texas fever have occurred for several years, and the herd has almost quadrupled in number since it was established.

The fact that the herd has not increased more rapidly is due largely to the preponderance of male calves. This characteristic of the buffalo is so pronounced in all of the herds now in captivity that a cow is considered twice as valuable as a bull.

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FORESTRY FOR
LIGHT HOUSES

The federal light house bureau and the forest service are cooperating in forest work. Though this sounds strange, it becomes a very simple fact, as pointed out by the officials of the bureaus, that the cooperation is confined to the light house districts on the shores of the great lakes in the lumber states of Michigan and Wisconsin. The light house reservations here include a total of nearly 5,500 acres, and range in size from 30 acres at Grand Island, Mich., to 1,040 acres at Grand Marais.

An examination is just being started to determine the best forest methods to pursue on the reservations. On some, from which the timber has been cut, white pine and Norway pine will be planted. On others the timber already growing will be preserved through use. On two of the reservations, the forest experts point out, the opportunities are excellent for growing cedar and pine for spar buoys and piling, to be used in the work of the light house bureau itself.

All parts of the reservations can not be devoted to forests. Some areas will have to be left clear for protection from fire, while others immediately adjacent to the beacons themselves will have to be left bare in order that the lights may not be obscured.

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1913

(From the U. S. Forest Service.)

PRAIRIE DOGS AND
THE GRAZING INDUSTRY

Washington, June 25 .--As a detail of its campaign against prairie dogs on the sheep and cattle ranges of the West, the Biological Survey of the Department of Agriculture is using carbon bisulphide in connection with eight tons of poisoned grain for the extermination of the little pests on the ranges of the Coconino National Forest, Arizona.

Generally the Biological Survey works to prevent the extinction of birds and mammals. In the present instance it justifies its war against prairie dogs on the principle of the campaign against the bubonic-plague rat and squirrel, or against the rabbit which girdles fruit trees.

The damage done by the prairie dog, it is pointed out, affects the stock-raising industry in two ways. First, many acres are laid bare in the neighborhood of prairie dog villages, and the amount of food available for cattle is proportionally reduced. Second, valuable animals, frequently horses, have to be killed after they have broken a leg in a prairie dog hole.

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According to the Department's expert the stock industry has unwittingly favored the increase of prairie dogs by killing off coyotes that prey upon stock but are also natural enemies of the prairie dogs.

Last year on the Cochetopa National Forest of Colorado fifteen tons of poisoned oats freed somo 26,000 acres of grazing land from prairie dogs. On the Pike National Forest, in the same State, seven tons of oats were used to clear 60,000 acres. This year five or six tons of the poisoned grain only was used on the Cochetopa and three tons sufficed for the Pike.

It is estimated that on all the National Forests about 278,000 acres, which had been rendered worthless for grazing purposes by prairie dogs, have been restored to their former usefulness. Since it takes on the average 40 acres to support one cow, or eight sheep, this means a gain in the carrying capacity of the range sufficient to run 6,950 cattle or 55,600 sheep.

In 1908 the government began to carry out this campaign, and in 1911 worked on a large scale; it was so successful that in 1912 the quantity of poison put out was doubled. This year's campaign is one of cleaning up the areas where there was almost complete extermination in 1912.

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(From the Forest Service, U. S. Dept. of Agriculture.)

ASSOCIATIONS OF FOREST USERS MAY PARTICIPATE IN NATIONAL FOREST ADMINISTRATION

NOT RELEASED FOR PUBLICATION UNTIL JULY 22, 1913.

Washington, July 21.--To give settlers and other local users a larger voice in national forest administration, Secretary of Agriculture Houston has just promulgated a new regulation which goes into effect at once, providing a means by which the forest service may systematically cooperate with duly organized associations of such users.

Any association whose members include a majority of the local residents making use of the national forests may get together and select a committee, to meet with the local forest officers. This committee will be recognized in an advisory capacity in settling questions which may arise between the forest service and the public in the use of the forests.

The exact wording of the regulation is:

"Wherever any association whose membership includes a majority of the local residents using a National Forest, or portion thereof, for like purposes, shall select a committee, an agreement on the part of which shall be binding upon the association, such committee, upon application to the District Forester, may be recognized in an advisory capacity on behalf of the association, and shall be entitled to receive notice of proposed action and have an opportunity to be heard by the local Forest officer in reference to any proposed changes likely to materially affect the use or interest in the Forest or portion thereof . -

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enjoyed by such permittees. The general principles of recognition and responsibility governing cooperation with live stock associations are herewith extended, so far as they are applicable, to the other regular lines of business conducted on the National Forests."

The object of this regulation is to extend what may be called home participation in national forest management. It is recognized that the best use of the forests in the interest of the general welfare means the promotion of local welfare, and that the forests must be handled with careful consideration for all local interests involved. It is recognized also that public confidence in the spirit of fairness with which individual citizens are treated is essential, and that local participation in the settlement of many questions is the best possible safeguard against arbitrary or unwise decisions by local forest officers.

In other words, it is desired to prevent any local feeling that a western user in contact with the national forest administrative system is up against a far-away bureau at Washington, represented on the ground by a forest officer who can do as he chooses and against whose actions it is impossible to make effective protest. In the case of the grazing regulations a method of cooperation between the forest service and users of the forest ranges has been developed which is said to have done away completely with any such feeling. Cattle and sheep growers' associations not only assist in the settlement of disputes concerning individual privileges but also join in the formulation of plans for the best use of local ranges and

through their national associations are given an opportunity to be heard before regulations which affect their industry as a whole are adopted. The local associations insure attention to complaints of unfair action which are found to be justified, while on the other hand they automatically dispose of many cases of complaints that are found, when all the facts are considered, not well grounded.

It is the announced policy of the department to favor the greatest good to the greatest number, and the local user over others. With the help of the advisory boards now provided for, many of the problems affecting individuals which the application of such a policy involves can be settled by submitting them to what is practically the organized public sentiment of their own neighbors. On the other hand the organization can initiate questions and bring them to the attention of the forest service, backed by the voice of the majority of those who are dependent upon the forest industries.

Already several associations besides those composed of stockmen are cooperating with the forest service, though there was no provision for their official recognition before the new ruling of the Secretary went into effect. One of the pioneers was the Malad Forest Users' Association, composed of men who reside in or near the Pocatello Forest which lies on the border of Utah and Idaho. The advisory board of this association has acted as a clearing house for complaints and a medium through which mutually advantageous understandings might be reached. It is said to have saved its members and the forest service much trouble, embarassment, and even litigation.

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(From the Forest Service, U. S. Department of Agriculture.)

CANAL COMMISSION SEEKS GENUINE GREENHEART

NOT RELEASED FOR PUBLICATION UNTIL OCTOBER 16.

Clayton D. Mell of the U. S. forest service sailed today from New York for British Guiana to inspect greenheart timber to be used in the construction of docks and other marine works for the Panama canal. He goes at the request of the isthmian canal commission, in order that the engineers may be sure that they are getting genuine greenheart timber, for which a number of inferior substitutes are offered.

Genuine greenheart has the reputation of being the most resistant wood to the attack of marine borers and to decay. Borers are especially bad in tropical waters. The wood is, in addition, hard, heavy, and durable, and not subject to damage from impact and wear. Indisputable records show that the best grades of this wood surpass iron and steel as to lasting qualities in contact with salt water. It has been known and used since 1769. Logs have remained intact under water for 100 years. Lock gates in English canals have been made of it for years, and the only limit of their durability so far has been the length of service of their iron bolts and fastenings, which usually can be renewed without much trouble. Greenheart in Liverpool lock gates built in 1856, removed to allow a deepening and widening of the ship channel in 1894, was used over again when the gates were reconstructed. The sills and fenders of the lock gates at Panama will be made of greenheart, and much of the docks will be constructed of the same material.

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(From the Forest Service, U. S. Department of Agriculture.)

DIRECT SEEDING

GIVES GOOD RESULTS

Pine seed sown directly in the spots where the trees are to grow is yielding good results in young trees on the Tahoe national forest in western California.

This is in marked contrast to the usual results in such cases, because squirrels, mice, and birds will eat the seeds where they are planted without protection, and even when these enemies allow the seed to germinate, the drying out of the soil in drouth periods is usually too much for the tiny seedlings during their first season.

Because of these vicissitudes foresters usually find it advantageous to grow the seedlings in nursery beds, where seeds and plants can be protected by wire screens and shade frames, and where water can be applied when needed. Usually, too, the seedlings are transplanted once or twice before they are set out in their final situation, the transplanting process serving to develop stocky plants with compact sturdy roots. While the nursery bed and transplant process involves more work, it is said to be generally cheaper in proportion to results accomplished, particularly when the cost of seed is taken into consideration.

The California experiment, which indicates the possibility of direct seeding of certain species in some localities, was conducted on an area of 22 acres, sown in the fall of 1910 to Jeffrey pine. A large number of seedlings have become thoroughly established and have made thrifty growth. The plantation is at an altitude of 6,000 feet where there is more moisture than at lower elevations.

When the seeds were planted they were coated with red lead to discourage mice and other rodents, but so far as the forest officers could find out the lead coating had no such effect; not enough of the seed was eaten, however, to destroy the value of the planting.

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(From the Forest Service, U. S. Department of Agriculture.)

INCREASED GRAZING IN CALIFORNIA FORESTS

NOT RELEASED FOR PUBLICATION UNTIL SEPTEMBER 1, 1913.

There has been a gradual increase in the demand for range within the national forests of California, as indicated by the reports covering the fiscal year 1913, which have just been sent to the forester in Washington. Statistics prepared by the U. S. department of agriculture, however, show a falling off in the number of live stock in the state of California amounting to 56,000 head of cattle and 53,000 head of sheep as compared to the same date of the preceding year.

The most striking change in grazing conditions on the national forests has been in the increased number of persons holding permits to graze stock within the forests. There are 153 new permittees, which increases the total for the state from 2,888 to 3,041. The total number of cattle and horses provided with range was 181,716 head, a raise of 1,852 head above the 179,764 head for which permits were issued the previous year. The number of sheep and goats also increased from 444,648 head to 449,105 head, a gain of 4,457. There was, however, a slump in swine, which dropped from 3,480 to 2,360 head.

The average number of cattle and horses per permit in the state of California is 68 head, while the average number of sheep and goats is 1,191 head. These averages are a trifle less than the general average for all the national forests of the United States.

While the number of stock grazed upon the national forests of California continues to increase, there is as a matter of fact an actual decrease in the acreage of forest land available for the use of stockgrowers. This decrease is due to several causes, such as; actual eliminations from the forests of large areas; the demands of settlers for agricultural land under the homestead act of June 11, 1906; the demands of tourists for small areas upon which they may pasture their saddle and pack stock while visiting the almost countless points of scenic interest in the state; and the rapid extension of tree growth over areas which in the past furnished a large proportion of the forage consumed by the stock.

During the past year, for instance, the forest service recommended the elimination outright of some 100,000 acres of land, and the national forest area was restricted by that amount. It also recommended that 564 tracts of land, with an aggregate acreage of 59,367 acres be listed and opened to agricultural settlement. While in some cases the applicants have not filed upon or occupied the land, a great many of the claims have been settled upon and are rapidly being brought under cultivation, thus curtailing the amount of land available for the pasturage of permitted stock.

During the year thousands of tourists seek health and recreation in the national forests of California, and in order to supply suitable forage for the saddle and pack animals of

the tourists it has been necessary to exclude cattle and sheep from many choice meadows and bits of grass land. In the majority of cases the stockgrowers have voluntarily consented to these reductions in their grazing allotments and in some cases have contributed to the costs of fences, or have otherwise protected the areas set aside for tourists' use, in spite of the fact that the segregation of these tracts has materially reduced the available supply of forage.

In the eyes of the stockgrower the factor which most seriously threatens the future of his business is the rapid extension of trees and brush cover over the lands which previously were principal sources of forage supply. Prior to the creation of the national forests repeated fires and the overgrazing of the lands prevented any natural reestablishment of the forest cover, but under the systems of fire protection and range management adopted by the service the burned-over lands are reforesting wherever natural conditions are favorable.

However, according to the officers, the curtailment in available range area which has been brought about by the conditions mentioned is more than offset by an increase in forage productivity on the lands remaining open to the grazing of live stock, and it is quite apparent that the improvement in range conditions which is being effected by the forest service will keep pace with the demands of the industry so that it will be entirely possible to provide summer range upon the national forests for all of the stock which can be wintered within the locality adjacent to and not [illegible] dependent upon the forest ranges.

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(From the Forest Service, U. S. Department of Agriculture.)

CALIFORNIA POWER COMPANY GETS FEDERAL PERMIT

NOT RELEASED FOR PUBLICATION UNTIL SEPTEMBER 17, 1913.

On September 5 the secretary of agriculture signed a water-power permit granting to the Sierra Electric Power Company the right to use for power development certain land within the Lassen national forest, California. The company is organized under the laws of the state of California and has its office and place of business in Oakland.

The water-power project is located on Mill Creek and approximately 25 miles east of the city of Red Bluff in Tehama County. By means of low dams across the creek the flow is to be diverted into a conduit with a capacity of 300 second-feet and a total length of more than 16 miles. At the upper end of the pressure pipes a small regulating reservoir is to be built. By this means, it is hoped to reduce, if not eliminate, a large portion of the water-waste occasioned by hourly fluctuations of the load. In the power house -- which is to be built of concrete -- there will be installed machinery capable of providing a constant output of 22,500 kilowatts. The electric power will be transmitted to the market at 110,000 volts.

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(From the Forest Service, U. S. Department of Agriculture.)

AMERICAN WOODS GO TO ORIENT

Recent statistics indicate a marked increase in exports of lumber from the United States to the Orient. More than a quarter of a million feet of American woods are reported as being used in Samoa, Hawaii, and the Philippine Islands.

Heretofore, it is said, raw materials have been made up into finished articles in the United States, almost without exception, and exported as such. With the discovery by American manufacturers in the Philippines that they could import United States woods and make them up with profit there, wood-using factories were built. Pacific coast woods, in consequence, are in many cases taking the place of the native woods with such picturesque names as apitong, teak, narra, and yacal.

Douglas fir, according to the information collected by the forest service, is the principal wood exported from this country. It is said to be the favorite wood among insular manufacturers for flooring, ceiling, siding, cornice, shelving, finish, and boat work. Makers of furniture demand California redwood and sugar pine, southern quarter-sawed oak, eastern ash, sugar maple, and western white pine.

Four woods, principally conifers and oaks, go into the construction of boats; for framing parts, masts, spars, interior trim, planking, boat crooks, and tiller handles. Meat blocks are made from sugar maple, which with sycamore supplies the entire demand in the United States. Wagon felloes are made of white oak, and other parts of vehicles are manufactured from high-grades of white ash and white oak.

(From the Forest Service, U. S. Department of Agriculture.)

STOCKMEN PARTICIPATE IN MANAGEMENT
OF NATIONAL FORESTS

During the past fiscal year, according to a report of the U. S. forest service, 31 local organizations of stockgrowers using national forest ranges have applied for and secured the official recognition of their advisory boards by the forest service. This brings the number of associations officially recognized by the forest service to a total of 115.

Through the medium of these advisory boards several thousand stockmen who graze stock upon the national forests, now take an active part in discussing all problems of forest administration which affect their interests. The result, states the forest service report, has been the elimination of misunderstanding regarding the requirements of the stock interests and an improvement in methods of range control which has won the endorsement and approval of the large majority of the persons who depend upon the national forests for the pasturage of their stock.

Two of the stockmen's associations are national in their scope and one is a state organization. The remaining 112 are local organizations. The stockmen have, it is said, been successful in securing advisory boards composed of broad-minded, unselfish men of wide practical experience who have

worked for the best interests of their industry but at the same time have given intelligent consideration to the need for forest protection, and who therefore have directed their recommendations along constructive lines.

The recent order of Secretary Houston extending official recognition to organizations of other classes of forest users is said to have resulted mainly from the large measure of success won by the cooperation of the government with the stockmen.

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(From U. S. Department of Agriculture, Forest Service.)

AMERICAN FORESTERS
HELP PALESTINE

An agricultural colony in Palestine has just applied to the U. S. forest service for help in planting trees to bind the drifting sands of the Mediterranean. The colony is near Jaffa, or Yafa, the ancient Joppa of the Bible, and there is being developed in connection with it a seaside resort, with hotels, villas, bath houses, and gardens.

The experts of the service point out that the reclamation of sand dunes is not a serious problem in the eastern United States because the prevailing winds are from the land and the sand is blown into the sea. On the west coast the situation is more serious. The most notable example of reclaimed sand areas there is furnished by Golden Gate Park, San Francisco, where grasses, acacias, and, later, trees and shrubs have converted sand wastes into pleasure grounds of great beauty.

The attention of the Palestine colony is called to the wonderful reclamation of the Landes, France, where a wealth-producing forest of maritime pine, the source of the French turpentine, has been grown to take the place of shifting dunes. The American foresters also give the address of the French seedsman who furnished this government with the maritime pine seed which has been used in planting experiments on the Florida national forest, near the Gulf coast.

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FOREST NOTES

11/10/13

There is a flourishing forest school in the Philippines, and 28 men were graduated with the class of 1913.

The so-called Scotch pine is the principal tree in the Prussian forests. Its wood is much like that of the western yellow pine of the United States.

In general it may be stated that the most dangerous forest fire periods in the west are in middle and late summer; in the east they are in the spring and fall.

Because of the importance of forestry at the annual conservation congress in Washington November 18 to 20, an extra day is added to the sessions, Monday, the 17th.

It has been suggested that guayacan, a very hard wood of Central America, may furnish shuttle blocks to supplement dogwood and persimmon, now most used, and in danger of becoming exhausted.

Under forest regulations in Colombia, rubber gatherers are required to give the trees a rest period in tapping them for gum. The size, number, and location of the incisions are regulated by law. In the United States similar regulations are in force in the tapping of pines for turpentine on the Florida national forest.

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(From the Forest Service, U. S. Department of Agriculture.)

STATES SHOULD COOPERATE WITH FOREST OWNERS

NOT RELEASED FOR PUBLICATION UNTIL NOVEMBER 18

Washington, November 17.--In addition to the administration of its waste lands for forest purposes, the individual state should play a part in cooperating with private timberland owners, commensurate with the interest which the state has in maintaining its timber supply.

This principle is enunciated by the committee on state forestry at the national conservation congress here. The committee further recommends as general principles for the practice of state forestry everywhere that the governing board should be removed from partisan political control, and that the state forester should be fitted for his work by professional training and experience.

Civil service should govern in the selection of all forest officers, and all industries directly dependent on the forests should be represented on the state forestry board. Further, the committee says, the forest officers should have ample discretionary power, and should be delegated enough authority to settle controversies as they arise.

After an organization is formed it should be provided with machinery which will make its work effective, such as ample funds, a sufficient force, prompt and effective measures against forest vandalism, and a strong police power. Without including all these things, the committee says, state legislation will fail of its purpose and largely be a dead letter.

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STATES GET A THIRD OF
FOREST SERVICE RECEIPTS

A circular just issued by the forest service calls attention to the various laws under which more than a third of all national forest receipts go to the benefit of the states in which the forests are situated, for schools and roads. In 1912 the amount of money thus made available for state purposes totaled about $750,000. The report does not show the amounts due from the receipts of the fiscal year which closed June 30, 1913. Including these, the states' share of national forest funds since the laws were passed has aggregated over $3,000,000.

These facts are set forth, according to the forest service, because a popular impression still exists that all money received by the government from timber sales, grazing fees, water power permits, etc., is permanently taken out of the states where it is paid and goes into the national treasury to meet the general expenses of the government. This idea is said to prevail, to some extent, even among actual forest users in the national forest states, where the division of receipts with the states has been going on for years.

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The circular states that part of the gross receipts of the national forests was first made available for schools and roads when the agricultural appropriation act of June 30, 1906, directed the Secretary of the Treasury to pay over to the state or territory in which any forest reserve was situated ten per cent of all money received during the fiscal year from such reserve. The money was to be expended by the state or territorial legislature for the benefit of public schools and roads in the counties in which the forest reserve lay. This legislation was recommended by the forest service because of the recognized burden imposed locally where national forests operate to prevent much land from becoming taxable.

In 1908 the amount to be paid to the states was increased to 25 per cent, and a proviso of the earlier act that no more should be paid to a county than 40 per cent of its total income from other sources was eliminated. Since this proviso was removed, some of the counties' receipts from national forest lands have equalled their income from all other sources.

In August, 1912, the agricultural appropriation act for the year made available an additional 10 per cent of the money received from national forests to build and maintain roads and trails within national forests for the benefit of the public, in the states from which these proceeds are derived. This 10 per cent "road item," as it is called, is

expended by the Secretary of Agriculture, who may, according to the act, "whenever practicable in the construction and maintenance of such roads, secure the cooperation or aid of the proper state or territorial authorities in the furtherance of any system of highways of which such roads may be made a part." The total amount expended under this provision from the receipts of the fiscal year 1912 is $207,295. This was apportioned among the states as follows: Alaska $4,673, Arizona $24,545, Arkansas $2,283, California $24,821, Colorado $21,503, Florida $931, Idaho $23,809, Kansas $489, Michigan $2, Minnesota $503, Montana $23,986, Nebraska $1,830, Nevada $6,034, New Mexico $11,850, North Dakota $38, Oklahoma $851, Oregon $17,023, South Dakota $4,226, Utah $13,604, Washington $12,758, Wyoming $12,254.

The Weeks law of March 1, 1911, providing for the acquisition of lands in the Appalachians, provides that five per cent of moneys received from each national forest into which the lands acquired are divided, be turned over to the state for its public schools and roads. New Mexico and Arizona, besides the sums before mentioned, are entitled to approximately 11 per cent of the gross proceeds of all national forests in those states in return for the state school sections within national forests. This provision is embodied in the act of June 20, 1910, authorizing the admission of the two new states.

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(From the Forest Service, U. S. Dept. of Agriculture.)

FOREST INSECT

RAVAGES STOPPED

1913

By a prompt campaign against a flourishing colony of bark beetles on the Ochoco national forest in central Oregon, the government is eliminating a danger which threatened to destroy millions of feet of timber.

Some authorities claim that the amount of timber killed each year by insects is equalled only by the annual loss from forest fires. Among the most destructive of these insect enemies are the bark beetles, one of which, the mountain pine beetle, is responsible for most of the damage on the Ochoco forest. This deadly little beetle is less than a quarter of an inch in length, but bears the ponderous scientific name of Dendroctonus monticolae Hopk. which, being interpreted, signifies killer of the mountain pine tree, discovered by Hopkins.

Its methods of operation are interesting. The mature beetle bores through the bark of the tree and excavates a gallery in the inner living bark and in the outer surface of the wood in which it lays its eggs. When hatched each young larva, or beetle-grub, channels into this growing portion of the trunk, feeding upon the inner bark. When full grown the larva, after passing through a dormant, or pupal stage, becomes a beetle. This beetle then drills out through the bark in July, and, emerging into the world seeks a fresh tree and starts a new generation. With this "chain-letter" method, it soon infests a large area. The galleries or channels of the larvae girdle the tree and kill it, and the beetle's presence is usually discovered, as it was in the Ochoco forest, by a patch of red-brown dead pine trees in the midst of a mountainside of green.

In fighting this forest scourge, the method recommended by the Bureau of Entomology is followed. The simple removal of the bark of infested trees between October and July, while the larvae are still in the tree, is sufficient to kill them. The lumber may then be sold while it is yet sound. On the Ochoco forest, however, there was no market, and the forest officers found that the cheaper and more effective method of control was to cut the trees and burn them before the new broods of beetles could emerge. In 1912 the infestation was given a decided check by the cutting of 3,500 trees. This summer the attack on the insects was resumed with renewed vigor, and 42 laborers, in charge of a forest officer, cut more than 40,000 trees. As a result of these vigorous measures, the government apparently has the beetles under control.

(From the Forest Service, U. S. Department of Agriculture.)

SHEEP USED TO TRAP SPOTTED FEVER TICKS

NOT RELEASED FOR PUBLICATION UNTIL TUESDAY, AUGUST 19, 1913.

The free grazing of 2,500 head of sheep upon the Bitterroot national forest, in the state of Montana, has been authorized by the secretary of agriculture as part of a novel experiment in trapping the deadly spotted fever tick. The forest service and the public health service are working together in cooperation with local sheep growers in this new campaign.

It is the general belief of the leading medical authorities that the mysterious and frequently fatal disease commonly known as spotted fever is spread by the tick Dermacentor andersoni which, in parts of the Bitterroot forest, occurs in such abundance that it constitutes a real menace to man and beast. Surgeon McClintic of the public health service died last year of spotted fever contracted during his study of the disesse and its control.

The plan proposed contemplates the grazing of two bands of sheep upon the parts of the forest where the tick is most abundant, with the idea that large numbers of the ticks will attach themselves to the sheep. Then, as occasion requires, the sheep will be freed of the ticks by being dipped

in an insecticide solution which will kill the ticks without in any way injuring the sheep.

The engorging of the female tick with blood is one of the essential functions of reproduction, and this gorging must of necessity take place upon the larger mammals which serve as hosts to the tick. The U. S. biological survey has reached the conclusion that the great bulk of the fever ticks which become filled with blood get their supply while attached to domestic stock, and that if the domestic animals are freed of ticks by dipping, by spraying, or by some other effective method of treatment, the chances of the infection of human beings will be vastly reduced. Of the different domestic animals the sheep is the most readily handled and the easiest to dip or treat, hence the selection of sheep for use in the experiment.

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(From the Forest Service, U. S. Department of Agriculture.)

BEST YEAR FOR
GOVERNMENT'S FORESTS

1913

Washington, December 10.--More than 2 billion board feet of timber, with a value of 4½ million dollars on the stump, was sold by the forest service last year, according to the annual report of Henry S. Graves, forester, published today. This is an increase of 167 per cent over the sales of the preceding year. The timber sold was largely for future cutting under contracts that will run for a number of years. The actual cut was a little less than 500 million board feet, an increase of 15 per cent over 1912. Still larger sales are in prospect.

Timber sale methods and problems

The timber sale policy of the forest service is summarized as aiming first of all to prevent losses by fire, and secondly to utilize the ripe timber which can be marketed. Other aims are: to cut so as to insure restocking and forest permanence; to get the full market value for the timber sold; to prevent speculative acquisition and private monopoly of public timber and to maintain competitive conditions in the lumber industry so far as possible; to provide first for the needs of local communities and industries; to open lands of agricultural value to settlement without allowing them to be tied up by timber

speculators; and finally, to secure as soon as possible the cost of production and administration to the government and a revenue to the national forest states, to which go 25 per cent of all receipts.

A large number of national forests already more than pay operating expenses. The revenue from the Alaskan forests now exceeds the cost of administration. The same is true generally in the southwest.

Range management and receipts

The forage resources of the national forests are pointed out as contributing to the maintenance of over 20 million head of livestock, which supply in part at least the demands for meat, hides, or wool of every state in the union. The receipts from grazing, during 1913, though second to those from timber were more than a million dollars, and showed an increase over the previous year in spite of the fact that the season was less favorable and the area reduced. Over 4 per cent more stock was grazed as the result of increased forage production and improvements in handling stock, especially sheep.

The system of range management employed by the forest service is held to offer hope of relief to the average citizen concerned over the dwindling supply of meat products and their alarming rise in cost. The national forests furnish abundant forage supplies, opportunity for the adoption of the best methods, freedom from livestock diseases, and protection in the enjoyment of all rights and privileges. Cattle from the Hayden

national forest in Colorado took the grand championship prize at the National Live Stock Show in Denver, and in many cases the lambs from the forests topped the market. Losses from predatory animals are growing less as the wolves, bears, and other animals are killed off by forest officers.

Game protection

In connection with the grazing work, the forests serve to protect game; and the Wichita forest, with its buffalo herd, is one of the show places of Oklahoma. During the year the service cooperated with the biological survey in placing over two hundred elk on various national forests. A large number of streams were stocked with trout fry.

Claims on the national forests

A large part of the report is devoted to a discussion of various kinds of claims under which title to land within the forests is sought. Nearly a thousand homesteads were taken up under a special act which provides for opening to settlement land suitable for agriculture. The report states, however, that some old homestead claims were instituted for the purpose of securing timber, and the same is still true of some mining claims.

> "As attempted frauds under the mining laws are usually resorted to by interests in no way associated with mining, similarly the vast majority of homestead frauds are not chargeable to practical farming; but the appeal to popular prejudice has been made in the name of the mining industry and in the name of the farmers of the country."

Mining claims

"The mining laws," Mr. Graves says, "afford the greatest cloak for land frauds in the national forests, and fraudulent mining claims are initiated by men and interests having no connection whatever with the mining industry." The mining laws, for example, have been used to cover townsite and timber claims, to secure farms and ranches, to secure mineral springs, sites for saloons, water power sites, and stock watering places.

It has often been asserted that the national forests have operated as a bar to legitimate mining development. Figures collected in Colorado during the past year show that, if anything, there is more activity in prospecting on the national forests than outside.

> "As with the stock industry, the proper relations of the forest service with the mining industry should be cooperative."

Classifying lands for use

One of the largest tasks of the service during the past year has been the classification of lands within the national forests in respect to their highest future use. This work was undertaken during 1913 on a more comprehensive scale than ever before, because there was a specific appropriation for the purpose. Large areas are being classified where the amount of land chiefly valuable for agriculture warrants its being taken out of the forests, and it also takes care of areas on which detailed classification will disclose small areas suitable for agricultural development within the forests. The work is being carried on with the assistance of the

bureau of soils and the bureau of plant industry. One result of this work was the elimination of 340,000 acres from the Nebraska national forest, 23,000 acres from the Rainier, in Washington, and 413,770 acres from the Deschutes and Paulina, in Oregon. About 300,000 acres in small isolated tracts were listed for settlement during the year. The areas now being examined for classification have a total area of about 3 million acres.

Water power development

The development of water power upon the national forests increased rapidly during the year, particularly in California. It is the purpose of the service to encourage power development in every possible way, while safeguarding the interests of the public. The minimum output from the permits now in force is nearly 800 thousand horsepower.

Regulations now in force aim to safeguard the interests of the public, prevent speculative holding of power sites, provide for complete and proper development and continuous operation, secure a return to the government for the privilege granted, provide a means by which states and municipalities may acquire power permits, and prevent unjust charges being placed on the consumer.

Improvements on the forests

The forests are being made increasingly accessible. More than 350 miles of road, nearly 300 miles of fire lines, nearly 4,000 miles of telephone lines, and 2,600 miles of trails were built. The present value of all public improvements on the forests is somewhat

over $3,000,000, two-thirds of this amount having been put into lines of communication and protection.

Receipts from all sources for the year were slightly under $2,500,000, showing an increase of 14 per cent over 1912, while expenditures for administration and protection were slightly over $4,600,000, showing a decrease from 1912 of 2 per cent. It is pointed out that the work of examining and appraising timber prior to sale is seriously behindhand in some regions and that larger receipts from timber are contingent upon the funds that can be made available for this purpose. Although money for timber-sale work is necessarily subtracted from what is needed to protect the forests against fire, improved organization of the fire-protective system has increased its efficiency. Owing partly to favorable weather conditions the total fire loss was only $67,000, less than 19 per cent of last year, which was the best to date.

The resident population of the forests is given as nearly 200,000, and the transient population as over 1,500,000. Recreation use of the forests is increasing greatly, and is in some places giving rise to the need for careful sanitary regulation in the interest of the 1,200 cities deriving their water supplies from streams protected by the forests.

Money for the states

Under existing law, 25 per cent of the gross receipts from the forests is paid over to the states by the federal government for the benefit of county schools and roads. An additional 10 per cent is expended in building roads and trails for the benefit

of the public. About $587,000 will be available for the states during the current year from last year's receipts, besides $235,000 provided for in the road fund. Altogether, including special funds to Arizona and New Mexico, the national forests provided nearly $867,000 to be expended for the benefit of the states in which they are situated.

Appalachian forests

More than 700 thousand acres have been acquired for national forest purposes in the southern Appalachians and White mountains, of which considerably more than half was secured during 1913. These lands are being protected against fire and the work of the government has greatly strengthened local sentiment against forest fires. Some 250 miles of trail, to help in fire control, were completed during the year.

Cooperation with states

Cooperation with states in protecting forested watersheds from fire has brought about a cooperative field organization in fifteen states and the same arrangement is contemplated with three others.

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FOREST NOTES 1/5/14

A rancher has applied for the rental of 320 acres on the Pike national forest, Colorado, to be used in connection with other private land, for raising elk as a commercial venture.

The government has just sold 43,000 cords of cedar wood for shingles from the Washington national forest. The shingles manufactured from this wood, laid six inches to the weather, would cover 2½ square miles of roof.

The navy department has asked the forest service to investigate guijo, a Philippine wood, for possible use in decking boats and ships. Longleaf pine, sugar maple, and beech are the domestic woods most used for decks.

The state university lands in Arizona are to be lumbered under a cooperative agreement between the government and the state land commission. Arizona is the first state in the southwest and one of few in the country to cut its timbered lands on forestry principles.

The annual meeting of the American Forestry Association will be held in Washington on January 14. A president, twenty-one vice presidents, a treasurer, an auditor and five directors are to be elected and plans made for an active campaign for forest conservation during 1914. The association has 8,000 members.

# # # #

(From the Forest Service, U. S. Department of Agriculture.)

GOVERNMENT MAKES LARGEST OFFERING OF TIMBER

NOT RELEASED FOR PUBLICATION UNTIL JANUARY 6, 1914.

Washington, Jan. 5.--Secretary of agriculture Houston today approved the disposal of one billion feet of western yellow pine timber from the Kaibab national forest in northern Arizona. In order to get this timber out it will be necessary to build a railroad approximately 200 miles long. Such a railroad will connect Colorado and Utah with the world-famous Grand Canyon of the Colorado, which hitherto has been accessible only from the south.

For several years the construction of such a railroad has been considered by various capitalists, but it has been stated that the lack of assured immediate traffic was an effectual barrier. It is pointed out, however, that a contract for a billion feet of timber will overcome this difficulty by providing a commodity for transportation which, together with tourist and local traffic, will place the project on a paying basis practically from the outset.

Chief forester Henry S. Graves made a personal examination on the ground, and this examination supplemented by the reports of his forest engineers, induced him to recommend the sale of such a large body of timber in order that the country might be developed through the supplying of this resource. Mr. Graves says, however, that the Kaibab forest is one of the most beautiful in America, and gives assurance that the marketing

of the mature crop of timber will not be allowed to mar the scenic beauty of the region.

In accordance with the timber sale policy of the government the stumpage will be disposed of to the highest bidder. In order to attract a sufficient investment to assure the building of the railroad and of the necessary lumber mills at least a billion feet of timber had to be offered. The investment necessary to make this timber accessible will amount to more than $3,000,000. By placing this quantity of timber before the lumbermen of the country the officials of the forest service believe that the development of extensive areas in southern Utah may be looked for, because the necessary railway will render accessible resources which have heretofore been undeveloped. The whole region is rich in agricultural land, in cattle and sheep range, and in coal and copper deposits, as well as in timber.

Bids for the timber will be received up to the middle of June, 1914, and three years will be allowed for the building of the railroad and mills, and twenty-five years for the cutting of the timber. The stumpage rates, however, will be readjusted at the end of each five-year period of the contract, the readjustments being based on the then current lumber prices.

By the end of the contract period, the forest officers say, the young trees left on the area first cut over will be ready for cutting, so that by the system of lumbering which the government will require, operations can continue permanently in

this lumber belt. The annual cut will be not less than forty million feet, most of which will be readily sold in the large consuming lumber markets in Utah and Colorado.

The Kaibab forest is one of the most heavily timbered in the southwest, the stand of timber being broken only occasionally by beautiful meadows or openings locally known as parks. Lumbermen who have visited it consider the country ideally adapted to logging. There are, altogether, two billion feet of timber, of which more than one billion feet are mature and ready for cutting.

# # #

1/10/14

FOREST NOTES

The American forestry association has members in every state in the union, in every province in Canada, and in every civilized and semi-civilized country in the world.

Makers of phonographs are aiming to use wood instead of metal in all parts of the instrument where this is possible, in order to increase the mellowness of the tone,

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On the Pocatello forest, Idaho, 230,000 trees were planted during the past year, and almost half a million in the past three years, fully three-fourths of which are alive and doing well.

Experiments in the use of aspen for shingles show that the shingles do not check in seasoning, and that they turn water satisfactorily, but that they are too easily broken in handling.

There are somewhat more than 500 recognized tree species in the United States, of which about 100 are commercially important for timber. Of the 500 recognized species, 300 are represented in the government's newly acquired Appalachian forests. All American species, except a very few subtropical ones on the Florida keys and in extreme southern Texas, are to be found in one or another of the national forests.

# # #

(From the Forest Service, U. S. Department of Agriculture.)

RANGE IMPROVEMENT WILL INCREASE MEAT SUPPLY

NOT RELEASED FOR PUBLICATION UNTIL January 17, 1914.

Salt Lake City, January 16.--Albert F. Potter, Associate Forester, U. S. Forest Service, made an address before the National Woolgrowers' Association here today and said that the question of meat supply is involved in the methods of grazing used on the national forests. He also made the statement that overgrazed ranges can be improved quicker through use than they could be if they were left idle.

He points out that the forage resources on the national forests represent a valuable asset upon which not only the welfare of the stockmen depends, but that of a large proportion of the people. The task of the government has been to work out a plan which would develop this resource and promote its use to the fullest extent without harming tree growth.

During the first three years of administration, from 1905-7, the problem of the service was to take care of areas which had been badly overgrazed, and a material reduction had to be made in the number of stock grazed before the damage could be stopped. From the very beginning, the forest service invited the cooperation of the stockmen and consulted with them regarding the practicability of the plans which were to be adopted. This cooperation was secured through the various stockgrowers' associations and it was

so successful that similar associations have grown up among other users of the national forests.

Before range control was put into effect, the feed belonged to the man who got his stock on the land first, though there was no way by which he could hold it except by physical force. Under such a system might made right, and the only thought was to get what feed there was while it lasted. This condition led to serious controversy and out of it grew the range wars which often resulted in loss of life and property. Under the present control, right prevails, and had nothing else been accomplished, Mr. Potter says, the removal of this one evil alone would have made the work worth while.

But he goes still further and states that the systematic use of the ranges has stopped loss of forage and that the feed formerly wasted has been putting the stock in better condition, with the result that, in many cases, the stockmen have been able to sell beef and mutton direct from the ranges where they were before producing only animals which had to be fed and conditioned before they could be put on the market.

He called attention to the experiments of the government in artificially reseeding the grazing areas to cultivated grasses, and showed that in some cases the forage crop has been increased as much as 400 per cent. He maintained, however, that this method is both slow and expensive and said that the great part of the range lands must be improved by protection and

natural reseeding, for the next 20 years at least. He says, too, that investigations have established beyond a doubt that natural reseeding can be accomplished best by a rotation system of grazing based upon the simple principle that grazing aids in scattering and planting the seed after the seed has been given an opportunity to mature. Reports show that areas protected until after seed maturity and then grazed, as compared with areas absolutely protected for the whole year against grazing, are approximately 50 per cent better, and probably 200 per cent better than range which has not been protected at all. This means that ranges can be improved faster in use than they can be in idleness and the principle is being adopted on many of the forests.

He also spoke of the new open system of handling sheep, which is simply quieter herding during the day and bedding the sheep where night overtakes them. He contrasts this with the old plan of herding sheep close by the use of dogs and returning them each night to a fixed bed ground. The old plan, of course, rendered certain areas absolutely bare and the going from and returning to the bed grounds trampled a great deal of forage. He estimates that an increase of 10 to 25 per cent has been added to the carrying capacity of the ranges and that 5 pounds weight has been added per lamb, because they have not been harassed by herding or forced to trail long distances to and from bed grounds. On 5,000,000 lambs

this means 25,000,000 pounds added to the sheepmen's salable product, and to the country's meat supply.

He gave an amusing instance of a government experiment in which it was attempted to try out the old alongside of the new system, but it was found impossible to secure a sheep owner who would return to the old method, except through a bonus. The change in handling has been in large part responsible for the building up of the Madison forest, which there enabled an increase in the number of sheep grazed from 90,000 to 107,000, with promises of further increases of several thousand.

One objection to the new method of handling sheep brought up by many owners has been that the herders who were used to the close system would not adopt the new one. The associate forester says that herders naturally take a pride in having their sheep look well and that since they are coming to realize that open herding means better sheep, they voluntarily adopt it.

In conclusion Mr. Potter mentioned other studies and experiments which the forest service is undertaking to help stock growers secure a better utilization of the forest resources and said that the success secured in the work has been due largely to the hearty cooperation of the stockmen.

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(From the Forest Service, U. S. Department of Agriculture.)

THE INCOME TAX RECOGNIZES FORESTRY

NOT RELEASED FOR PUBLICATION UNTIL JANUARY 21, 1914.

Washington, January 21.--Foresters and lumbermen see in a decision of the Treasury Department in regard to the administration of the income tax a strong argument for forestry. As they interpret the opinion of the Treasury officials they understand that no timberlands shall be subject to the tax until the timber is cut and marketed and that then the profit only will be subject to an income tax assessment. In other words, all costs will be deducted before the tax is levied, and these will cover the cost of growing the timber, including the cost of planting where necessary and of protecting the growing crop from fire and other depredation.

This decision was based upon a request for information made by P. S. Ridsdale, secretary of the American forestry association. He asked if there would be a tax on the value of the yearly growth of timber whether it was cut or not, and also whether an income tax would be assessed on the value of the timberland. In reply, the Treasury Department said that "the gain from the cutting and disposal of stumpage is realized in the year during which the timber is cut and disposed of, and that the amount received in excess of the cost of such timber is profit, and should be so accounted for as income for that year."

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(From the Forest Service, U. S. Department of Agriculture.)

MAPLE IS
HOLDING ITS OWN

Though at one time in the early history of the country an average of 6,000 maple trees were destroyed in clearing the ordinary New York or Pennsylvania farm, maple is today, according to the department of agriculture, one of the most widely used and valuable native hardwoods.

A bulletin on the uses of maple, just issued by the department, states that the wood finds place in an enormous number of articles in daily use, from rolling pins to pianos and organs. It is one of the best woods for flooring, and is always a favorite material for the floors of roller skating rinks and bowling alleys. It leads all other woods as a material for shoe lasts, the demand for which in Massachusetts alone exceeds 13 million board feet annually.

Sugar maple stands near the top of the list of furniture woods in this country. The so-called "birds-eye" effect, the department explains, is probably due to buds which for some reason can not force their way through the bark, but which remain just beneath it year after year. The young wood is disturbed each succeeding season by the presence of the bud and grows around it in fantastic forms which are exposed when the saw cuts through the abnormal growth.

Maple, the department goes on to say, is one of the chief woods used for agricultural implements and farm machinery, being so employed because of its strength and hardness. All kinds of wooden ware are made of maple, which holds important rank also in the manufacture of shuttles, spools, and bobbins. It competes with black gum for first place in the manufacture of rollers of many kinds, from those employed in house moving to the less massive ones used on lawn-mowers. Athletic goods, school supplies, brush backs, pulleys, type cases, and crutches are a few of the other articles for which maple is in demand.

Seven species of maple grow in the United States, of which sugar maple, sometimes called hard maple, is the most important. The total cut of maple in the United States annually amounts to about 1,150,000,000 feet. Nearly one-half is produced by Michigan, with Wisconsin, Pennsylvania, New York, and West Virginia following in the order named. Sugar maple, says the department, is in little danger of disappearing from the American forests, for it is a strong, vigorous, aggressive tree, and though not a fast grower is able to hold its own. In Michigan it is not unusual for maple to take possession of land from which pine or hardwoods have been cut clean, and from New England westward through the Lake States and southward to the Ohio and Potomac rivers few other species are oftener seen in woodlots.

# # #

(From the Bureau of Insular Affairs, War Department.)

PHILIPPINE FORESTS
INVITE AMERICAN ENTERPRISE

FOR RELEASE WHEN
RECEIVED.

The first big sale of Philippine timber, offering opportunities for lumbermen in the United States, has just been announced by the bureau of insular affairs of the war department.

While there are American firms operating in the Philippines, it is pointed out by the officials of the bureau that the Philippine islands offer to progressive lumbermen chances for profits not excelled by any other field in the world. The forest officers of the Philippines state that the islands contain 200 billion feet of merchantable timber for which there is a large present demand and that practically all of it is owned by the government and is available under very favorable terms. In almost all cases the forests can be easily logged by the most improved machinery and methods.

The timber itself, it is pointed out, includes structural material of great value, in addition to many fine hardwoods particularly suited to cabinet work. In this latter class some of the most plentiful woods may be sold in competition with mahogany, such is their beauty of grain and richness

of color. Manila is only two days' distance from Hongkong, and China, which has largely exhausted its timber, furnishes a ready market. Japan, Australia, and even the United States, will take Philippine lumber, which is admitted free to this country. One of the commonest Philippine timbers, red lauan, which works and finishes well, has been sold on the Pacific coast where it serves the same purposes as the finest redwood, which it somewhat resembles, as high as $80 per thousand board feet.

Government timber in the Philippines is offered at a very low rate and it is stated that the labor problem is in no sense difficult. Investments by Americans are not only invited, but are encouraged.

The Philippine bureau of forestry, in this first sale which is being called to the attention of American timber operators, is offering a twenty-year concession which gives exclusive rights to a tract comprising about 95,000 acres, which contains nearly 2 billion board feet of timber. It is required that the successful bidder shall keep up a certain minimum output which starts with 15 million board feet during the first two years and increases to an ultimate output of at least 21 million per year. A modern sawmill and logging equipment must be established and also a patrol system for the prevention of fires and trespass.

A complete report on this body of timber, which can be had at the office of the director of forests in Manila or at the bureau of insular affairs in Washington, shows that the region occupied by the main body of the tract presents ideal logging conditions. This report shows that railroads can be built easily and cheaply and that the entire timber belt can be logged at a minimum of expense and trouble. The amount of timber per acre varies from 12,500 up to 30,000 board feet and more. In the four principal types of forest embraced in the area, much valuable material can be secured from even the least desirable type, and the most valuable types will, according to figures of the bureau, provide a handsome profit for an outlay comparatively small in relation to the value of the timber which is to be exploited.

The principal kinds of wood are the lauans, excellent construction timbers and somewhat comparable, in mechanical properties, to the Pacific coast redwoods; yacal, one of the most valuable because of its great strength, and its resistance to destruction by white ants; apitong, quite comparable to the hard pines of the United States, and various other hardwoods which have already found a place as substitutes for mahogany.

It is required that the successful applicant shall furnish a capital sufficient for the immediate prosecution of the work, the amount in this case being placed at not less than 100,000 pesos, Philippine currency, equivalent to $50,000.

It is proposed that all bids for this timber shall be opened in Manila on December 10. For the benefit of prospective purchasers in America, however, unable to prepare their applications and have them received in Manila on or before that date, the bureau of insular affairs in Washington will on notification before the final day send a cablegram and have the time extended until the actual bids can be received in Manila.

# # #

(From the Forest Service, U. S. Department of Agriculture.)

CENTENNIAL STATE SENDS
MEMORIAL TO WASHINGTON

Masons have just finished setting in the Washington monument Colorado's contribution to the shaft in memory of the first president. It is a beautiful specimen of the Colorado Yule marble, the same material which has been selected for the two million dollar Lincoln memorial to be placed on the bank of the Potomac just west of the monument.

This marble comes from within the Sopris national forest, which furnishes a large part of the timber used in the quarrying operations. The maintenance of timber supplies for this and for other quarries and mines is, according to forestry officials, an important part of their work. It will always be their aim, they say, to maintain a supply of timber for this local demand as an aid in the development of one of Colorado's great resources, of which Governor Ammons, who came to Washington to arrange for the placing of the stone, is very proud.

The stone itself will present a rectangular face 2 by 4 feet, upon which the name and seal of the state are inscribed together with the year in which the state was admitted. It is on the 290-foot landing inside the monument in the middle of the east wall and is thus one of the highest of the many tributes which line the lower part of the historic obelisk. It is now draped from the gaze of the public awaiting a date to be set by Senator Shafroth for simple unveiling ceremonies.

# # #

FOREST NOTES 1/17/14

There are 36,500,000 young trees in the government's forest nurseries.

Two tons of cascara bark have just been sold from the Siuslaw national forest, Oregon, at one cent a pound.

The northernmost national forest is the Chugach in Alaska; the southernmost is the Luquillo in Porto Rico.

For shingles alone, 750 million feet of timber is cut in that part of the state of Washington which lies west of the Cascades.

California led last year in timber sold from national forests, though Montana had the largest number of sale transactions.

The American forestry association has just elected Henry S. Drinker, president of Lehigh university, and P. S. Ridsdale, as its president and secretary respectively.

The biological survey and the forest service have been cooperating in the extermination of ground squirrels on national forests in California. The annual loss of range feed and grain crops from ground squirrels is enormous.

# # #

FOREST NOTES 1/24/14

The war department is reforesting a large area near Fort Bayard, New Mexico, for use as an army hospital site.

The light house reservations on the great lakes are able to grow all the white cedar needed for spar buoys in their district.

The Kaibab and the Coconino national forests adjoin each other. Yet it takes from two to three days to go from one to the other across the Grand Canyon of the Colorado.

There are several bands of the Persian fat-tailed sheep on the national forests of southern Utah. The large fat tail sometimes weighs as much as forty pounds, and, like the hump on the camel, is a reserve supply of nourishment when food is lacking.

Dr. B. E. Fernow, dean of the forest school of the university of Toronto, and Bristow Adams, of the U. S. forest service, have just been elected president and secretary, respectively, of the society of American foresters, the only organization of professional foresters in the western hemisphere.

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The [illegible] Coconino national forests adjoin each other. [illegible] two to three days to go from one to the other [illegible] the Grand Canyon of the Colorado.

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Dr. S. B. Fernow, dean of the forest school of the [illegible] Toronto, and Dr. [illegible] Adams, of the U. S. forest service, have [illegible] been [illegible] president and secretary, [illegible] of the [illegible] American foresters, the only [illegible] of professional [illegible] in the western hemis-

FOREST NOTES 1/31/14

The legislatures of Virginia and South Carolina are considering advanced forestry legislation.

Incense cedar is proving valuable for piling on the Pacific coast where marine borers are particularly troublesome.

The paper used by the government printing office each year requires approximately 125 million pounds of rag pulp and 490 million pounds of wood pulp.

F. A. Elliott, state forester of Oregon, says that cooperative fire patrol associations among lumbermen for prevention of forest fires have proved their worth.

Of 606 fires last year on the national forests of Arizona, New Mexico, and Oklahoma, more than one-half were caused by lightning. Campers set about one-tenth, and railroads one-twentieth.

Roadside signs, each containing a single catchy sentence in large type, are proving effective in warning against fires on western forests. They give the essentials and tell the importance of protection against forest fires.

# # #

UNITED STATES DEPARTMENT OF AGRICULTURE

FOREST SERVICE

FOREST NOTES

2/9/14

Receipts from the use of national forest resources were greatest in Arizona last year.

Dr. C. D. Marsh of the federal bureau of plant industry is delivering a series of illustrated lectures to stockmen in the west on the subject of plants poisonous to stock.

The Biltmore forest school, established in 1898 and therefore the oldest forest school in America, has been discontinued. Dr. C. A. Schenck, its director, has returned to his home in Germany.

The forest service is compiling a new volume table for calculating the board contents of standing western yellow pine trees in the southwest. It is based on actual measurements of 6,000 trees.

In trying to find uses for blight-killed chestnut it has been found that it can not be utilized for crating stone; quarry owners say that chestnut wood leaves an indelible stain on the marble or granite.

Railroads caused nearly half the forest fires in Colorado and Wyoming last year, and almost one-sixth were set by lightning. In California lightning started more than half, with railroads a comparatively insignificant cause.

# # #

FOREST NOTES 2/18/14

Minnesota has a forested area of 28 million acres, the largest of any state east of the Rocky Mountains.

There are approximately four million acres of timber land in New Hampshire of which about half is in farmers' woodlots.

Forest fires in the United States have caused an average annual loss of 70 human lives and the destruction of 25 million dollars worth of timber.

Juniper from the Indian reservations of New Mexico and Arizona may prove an excellent source of material for lead pencils. Manufacturers are searching the world for pencil woods.

Canada has established a forest products laboratory in connection with McGill University at Montreal, on the lines of the United States institution of the same sort at the University of Wisconsin.

Tree planting on national forests has to be confined to comparatively short intervals in spring and fall. In spring it starts when the snow melts and stops with the drying out of the ground; in the fall it comes between the fall rains and first snowfall.

# # #

Canada has 23 million acres in timber reserves, as compared with 187 million acres in the national forests of the United States.

Apple wood is the favorite material for ordinary saw handles, and some goes into so-called brier pipes.

New Jersey has a timbered area of about two million acres, on which the timber is worth about $8,500,000 on the stump. It is mainly valuable for cordwood.

Many of the forest fires attributed to railroads are caused not by sparks from locomotives, but by cigar and cigarette butts thrown from smoking-car windows.

Port Orford cedar of the Pacific coast, recently tried as a substitute for English willow in the manufacture of artificial limbs, has been found unsatisfactory. While it is light enough, it is too coarse and brittle.

As an experiment, the supervisor of the Beaverhead national forest is stripping the bark from the bases of a number of lodgepole pine trees at various periods before they are to be cut for telephone poles. This girdling causes the trees to exude resin, and it is desired to find what effect this may have as a preservative treatment for the poles.

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UNITED STATES DEPARTMENT OF AGRICULTURE
FOREST SERVICE

(From the Forest Service, United States Department of Agriculture, San Francisco Office)

FOREST MEN OPEN

BIG CONVENTION

The annual conference of district foresters of the United States Forest Service is being held this week at Salt Lake City. Officials from the Washington office and from the six western forest service districts are in attendance.

The disposal of timber on the national forests is the chief topic of discussion. The sale of timber from national forests is increasing each year and has now become one of the important activities of the forest service. Reports show that there are now 650,000,000 feet of timber cut annually, bringing in about $1,400,000 to the government. It is expected that this will increase considerably this year.

The foresters will take up the question of the possible adoption of standard policies to be followed in the future, including utilization of inferior species of timber, consolidation of timber lands by exchange, elimination of unnecessary procedure and simplification of methods of selling timber, appraisal of timber sold to small mills, the extent to which brush piling and burning should be required, the policy to be followed in selling timber to settlers at actual cost, standard of cruising timber, free use of timber by settlers and prospectors, and plans for the reforestation of denuded lands.

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UNITED STATES DEPARTMENT OF AGRICULTURE
FOREST SERVICE

(From the Forest Service, United States Department of Agriculture, San Francisco Office)

TIMBER CRUISING IN THE
CALIFORNIA NATIONAL FORESTS

Five timber-cruising parties have been in the field in California this winter on the Modoc, Shasta, Lassen, Plumas, and Eldorado National Forests, each party consisting of from four to six Forest Service rangers. The work is done on snowshows, and this mode of travel has proved to be an excellent way of getting over country which is too brush to permit easy going in summer. There has been some delay this winter on account of storms, but as a rule very little time is lost and timber cruising has been found to be profitable employment for the rangers during the winter season.

UNITED STATES DEPARTMENT OF AGRICULTURE
FOREST SERVICE

FOREST NOTES 2/21/14

The state of New York has just published a comprehensive report of its wood-using industries.

Canada has a society of forest engineers. Dr. B. E. Fernow, of Toronto, is president, and Mr. F. W. H. Jacombe, of Ottawa, is secretary.

Of the three Pacific coast states, Oregon and Washington far outstrip California in the work done by private owners for forest protection.

The development of quicksilver mines promises to make large demands for cordwood and construction timbers on the Tonto national forest, Arizona.

Manufacturers of greenhouses and makers of boxes are getting in touch so that the latter may use for box cleats the cypress waste from the greenhouses.

Lodgepole pine seed sown broadcast on the snow in southern Idaho last spring germinated when the snow melted, and as many as 60 little trees were counted to the square foot. The summer was so dry, however, that most of the plants died, except where sheltered by brush or logs.

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Connecticut has one and a half million acres of timberland, mainly in farmers' woodlots.

India is developing an important turpentine industry, though it does not yet supply the home market.

Only one wood, Spanish cedar, (Cedrela odorata) is commonly used for cigar boxes. Sometimes a cheaper wood may form the basis of the box, with paper-thin veneers of the tropical cedar over it.

It has been suggested that certain kinds of timber on the national forests be reserved for the needs of the navy. This recalls the fact that the first forest reservations in this country were made for naval material.

The department of agriculture is trying to eliminate the danger to cattle from poisonous plants on national forest ranges. Of these plants, larkspur loco weed, death camas, and water hemlock are the most poisonous. Larkspur does the most harm, because it is so widely distributed and is particularly bad for cattle. Ordinarily, horses will not eat larkspur, and sheep can eat it without apparent injury.

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UNITED STATES DEPARTMENT OF AGRICULTURE
FOREST SERVICE

(From the Forest Service, United States Department of Agriculture, San Francisco Office)

WAGE WAR ON

PINE BEETLES

Five thousand dollars will be expended on the Sierra National Forest in Madera County this spring in the extermination of beetles which are killing valuable timber. Nearly 3,000 big pines, worth $12,000, are reported killed by insects on the areas involved in this project, during the past year, and prompt measures are expected to save a body of timber worth many times the amount expended.

It is explained that the beetles do their work by tunneling horizontally beneath the bark in the outer layer of living wood which carries the food supply to the living portions of the tree. If the tree is completely girdled it dies; if only partly girdled its vitality is so weakened that it may fall a prey to other diseases. Control work consists in cutting the infested trees before the beetle emerges, peeling the bark and burning it.

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UNITED STATES DEPARTMENT OF AGRICULTURE
FOREST SERVICE

(From the Forest Service, United States Department of Agriculture, San Francisco Office)

HOMESTEADS LISTED ON

NATIONAL FORESTS

Eighty applications were filed with the District Forester at SanFrancisco, during February, under the Forest Homestead law for the listing and opening to entry of lands within the national forests of California. In addition to these there were twelve requests to amend previous applications by including more land. The lands applied for will be examined, and if found to be chiefly valuable for agriculture will be listed with the Department of the Interior to be opened to settlement and homestead entry.

Every applicant must be qualified to make a homestead entry and will not receive title to the land until he has complied fully with the homestead law chich requires residence upon and cultivation of the land for a period of three years.

During the month reports were made on 55 different tracts which had previously been applied for. Sixty tracts, embracing 9,491 acres, were listed to be opened to entry.

# # # #

FOREST NOTES 3/16/14

The Canadian forestry association, which recently met in Ottawa, has selected Halifax, Nova Scotia, for its next annual meeting place.

The stringent requirement of the forest service that all sheep be dipped before entering the national forests has practically eradicated scabies on those areas.

The lumbermen of Maine in 1900 originated in this country the use of mountain lookout towers with telephone connection for the prompt location and suppression of forest fires.

A California firm is selling eucalyptus charcoal at $24 a ton, as against $20 a ton for oak charcoal. Since most of the California-grown eucalypts do not make good lumber, uses for other products of the tree are being sought.

Fifteen small sawmills are cutting timber from the Powell national forest in southern Utah, more than 100 miles from the nearest railroad. They are run by settlers during time that can be spared from the crops, and supply local needs since there is no opportunity to ship timber in or out.

# # # #

FOREST NOTES 3/27/14

The Canadian government is using Indian fire patrolmen to protect the forests of northern Manitoba.

A Pennsylvania gun company is using the waste pieces of black and Circassian walnut, left after veneer cutting, for gun stocks.

Ghent, Belgium, furnishes practically all of the potted specimens of the symmetrical Araucaria, or Norfolk island pine, used as an ornamental foliage house plant, in Europe and America. The United States imports at least 250,000 of these plants in 5 or 6-inch pots each year.

Arrangements have just been made for the sale of 40 million feet of timber on the Tongass national forest in Alaska. This forest is cut up by bays and inlets, some of which give an opportunity for taking the timber from the mill to the decks of ocean-going steamers. The Tongass forest is now self-supporting, its lumber product being used largely in local industries, much going into boxes for canned salmon.

California state inspectors at San Francisco have found a new canker disease on chestnut trees recently imported from Japan. According to Dr. Haven Metcalf, the government's expert on such diseases, this appears to be of the same type as the chestnut blight which is ravaging the forests of the eastern United States, and it is possible that the new disease would be equally as destructive if it became established in this country.

(From the Forest Service, United States Department of Agriculture, San Francisco Office)

LIVESTOCK INDUSTRY IN CALIFORNIA
SHOWS SUBSTANTIAL GROWTH

The growth of the livestock industry in California between the years 1910 and 1913 shows greater increase than in any other of the 17 states west of Missouri. According to statistics recently issued by the United States Department of Agriculture, the total number of livestock in California in 1913 was 1,964,000 cattle, 503,000 horses, and 2,603,000 sheep; these figures showing an actual increase for the three-year period of 392,000 cattle, 83,000 horses, and 231,000 sheep.

Taking the country as a whole, there was a considerable decrease in the number of cattle and sheep and a slight increase in the number of horses during that time. An increase in value, however, for all livestock in the entire United States for the same period is recorded; the figures for 1913 showing a total of $145,682,000 increased valuation since 1910.

# # # #

(From the Forest Service, United States Department of Agriculture, San Francisco Office)

GOVERNMENT ADVOCATES

USE OF LODGEPOLE PINE

Lodgepole pine, of which there are abundant stands in both the Rocky Mountain and Coast ranges, when treated with preservatives ought to serve in the place of red cedar as pole timber, says the department of agriculture in a bulletin just issued on Rocky Mountain woods for telephone poles.

The rapid extension of telephone and power lines in the west is making the question of pole supply one of increasing importance. Western red cedar, for long the standard pole timber of the western states, grows only in Washington, Oregon, and northern Idaho; and in the states south of that region its cost is high, owing to the great distance over which it must be transported. In addition, the heavy drain on the supply promises to result in increasingly higher prices.

The tendency of lodgepole pine to decay rapidly when in contact with the ground has so far kept it out of the field as a competitor of the cedar, according to the department, but the general adoption of preservative treatment by railroad and telephone companies changes the situation. At an additional cost for treatment that still leaves the pine pole the cheaper of the two in most markets outside the cedar region, states the department, the pine may be made to last longer than untreated cedar. Tests carried on at the Forest Service laboratory also showed lodgepole pine to be as strong as the cedar,

if not actually stronger

Fire-killed lodgepole pine, of which there is a vast quantity in the Rocky Mountain region, showed a strength under test 80 per cent that of live red cedar. In elastic values, the two were practically equal, and in stiffness the fire-killed lodgepole pine is quite comparable to the cedar. The prejudice against the use of fire-killed material is a mistaken one, says the department, for there is no inherent difference in wood seasoned on the stump and wood cut when green and then seasoned. On many areas such material remains entirely sound for a number of years after the fire which killed it, and besides is thoroughly seasoned and thus ready for preservative treatment as soon as cut.

The durability of the tops of these dead trees, as well as the tops of lodgepole pine poles and posts in actual service, indicates the fact that a preservative treatment covering only the portion in contact with the soil is necessary.

To illustrate the rapidity with which lodgepole pine is being recognized as a pole timber, the District Forester, San Francisco, states that a contract is now in effect whereby a large area of lodgepole pine on the Lassen National Forest is being sold to a company of local men. It is understood that this company will erect one or more creosoting plants and will place butt-treated poles on the market during the coming season.

# # # #

UNITED STATES DEPARTMENT OF AGRICULTURE
FOREST SERVICE

(From the Forest Service, United States Department of Agriculture, San Francisco Office)

TIMBERLAND OWNERS RENEW
FIRE COOPERATION

From the Trinity National Forest comes the announcement that the Sugar Pine Investment Company and the Bayside Lumber Company have just agreed for the third year to cooperate with the Government in protecting their timber holdings from fire.

During the two years that such cooperation has been in effect fires have been confined to less than one acre in the districts protected. During the season of 1913, which was unprecedented in the number of lightning fires, the 36 fires which started in one district were put out before they reached an average size of 120 feet square.

Since these and ~~xxxx~~ certain other companies in California have proved by experience that their forests can be protected at small cost by means of cooperation, the Government foresters believe that in the near future practically all California timber owners will take similar measures to safeguard their forests.

# # #

(From the Forest Service, United States Department of Agriculture, San Francisco Office)

SAVING FOREST TREES

FROM BARK BEETLES

Timber owners of California are working with the U. S. Forest Service for the extermination of the bark beetles which kill so many of the valuable sugar pine and yellow pine trees where no effort is made to keep them in check. On the Stanislaus National Forest there is an area of about 47,000 acres on which it is estimated that the yearly loss from this source is 1100 trees. The tract includes lands owned by two lumber companies, and a portion of the Yosemite National Park. Under the terms of a cooperative agreement two crews of men are now engaged in felling infested trees on this tract and burning the bark which contains the insects.

Forest Service officials have found that this work can be done only in the winter and early spring and in a normal season must be completed by May 1 since the warm weather causes the insects to emerge from the trees. It is estimated that the amount of timber saved in two years will pay the cost of the work.

The Forest Service is also cooperating with private timber owners in similar work on the California and the Shasta National Forests.

# # #

FOREST NOTES 4/4/14

The tenth successive year without a forest fire has just been passed by the Powell national forest in south central Utah.

Yellow poplar, or tulip tree, the largest broadleaf tree in America, has been known to reach nearly 200 feet in height and 10 feet in diameter.

Pennsylvania has about 7½ million acres of timberland, one-eighth of which is owned by the state. The total value of the state's timber is 139 million dollars.

Mistletoe thrives on the western coasts to an extent not approached in the east. In many places this parasitic growth is responsible, directly or indirectly, for a considerable loss of timber.

Forest officers in Washington and Oregon plan to discontinue the use of barbed wire on their forests. This will affect their own pastures and public drift fences. They say barbed wire has no advantage over smooth wire, that it injures stock, and that it is more likely to be borne down by soft snow. Stockmen on the Ochoco forest, in Oregon, recently constructed drift fences of smooth wire, though with some misgivings; now they say they will never use barbed wire again.

# # # #

FOREST NOTES 4/11/14

China imports wood pulp from Great Britain, Sweden, Norway, and Germany.

The highest mountain in Montana, Granite Peak, with an altitude of nearly 13,000 feet, is in the Beartooth national forest.

Norway has 144 tree planting societies. The first was founded in 1900, and since then 26 million trees have been planted, more than 2 million having been set out last year.

In many parts of the west snow is leaving the mountains earlier than usual. Foresters say that this may mean a bad fire season, and they are making plans for a hard campaign.

New Jersey is said to have the greatest proportion of railroad mileage of any state in the country, or one mile of railroad to every three square miles of territory. This makes an unusual risk of forest fires set by railroads.

The heavy storms in southern California during the past rainy season wiped out many miles of trails in the national forests of that part of the state. They are now being rebuilt for the coming summer, for use in fire protection. They are also of great use to tourists, campers, and prospectors.

# # # #

FOREST NOTES 4/27/14

In preparation for the coming fire season in California, 110 miles of fire lines have been built on the Sierra national forest.

The imports of matches into China greatly exceed in value any other wood product. Most of the matches come in from Japan.

Redwood sawdust is being used by vineyardists in California for packing fresh table grapes. It takes the place of the ground cork used for imported Spanish grapes.

Hyndman Peak, Idaho, the highest named peak in the state, is more than 12,000 feet high. Several unnamed peaks near it are of about the same elevation. All are on the divide between the Sawtooth and the Lemhi national forests.

A two-year-old plantation of Douglas fir on the Oregon national forest shows 94 per cent of the trees living. Extensive plantings of young trees in Washington and Oregon are costing only $8 an acre. Direct seeding of lodgepole pine has been successful without exception on the Arapaho national forest, Colorado. Several of the areas sown two and three years ago show from 5,000 to 10,000 seedlings per acre.

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(From the Forest Service, United States Department of Agriculture, San Francisco Office)

FOREST LANDS ARE
PUT TO MANY USES

Almost every conceivable use to which land may be put is represented in the permits reported by the Forest Service for special projects on the national forests. Some of the uses shown range, alphabetically, from apiary through brickyard, cannery, cemetery, church, cranberry marsh, fox ranch, marine railway, rifle range, and turpentine still, to wharf, and whaling station.

There are 15,000 permits in force for such special uses, which are distributed geographically from Alaska to the Mexican line and east to Florida. This figure does not include any of the 27,000 permits in force for grazing cattle and sheep on the forests, nor the 6,000 transactions for the sale of timber, and the more than 38,000 permits issued last year for the free use of timber by settlers, miners and others in developing their homesteads and claims; nor the nearly 300 permits for water-power development.

California led all the national forest states in the number of these special use permits, followed by Arizona, Colorado, Montana, and New Mexico in the order named. The largest single class of permits was for special pastures or corrals, to be used for lambing grounds, shearing pens, and the like. Next came rights of way for conduits, ditches, and flumes; practically all of these being free. Various agricultural permits come third, telephone lines fourth with

more than a thousand permits for 6,500 miles of line, and drift fences, for the control of grazing animals, fifth. In both of these latter classes, too, practically all of the permits are free. Reservoirs, for which more than 600 free permits were issued for the occupation of more than 100,000 acres, come sixth. The rest of the ~~government~~ uses are not classified, though there are a large number of apiaries, camps, summer hotels, and schools. The use of the government's lands for schools is given free; for hotels a charge is made.

The principle which governs the charge is based, according to the Forest Service, on whether or not the use of the land is sought by the permittee for a commercial purpose. If it is the intent of the user to make money from a resource which belongs to the whole people, the Service holds that he should give a reasonable return for that use. If, on the other hand, farmers want to use government land for their own telephone lines, irrigation works, and schools, the government gives them that use without cost.

# # # #

(From the Forest Service, U. S. Department of Agriculture, San Francisco Office.)

Scenic Forest to be Preserved.

On May 13 President Wilson signed a bill authorizing the exchange of certain described private lands in the Sierra National Forest and the Yosemite Park for National Forest lands, also described, of approximately equal value.

This is the outcome of negotiations between the Forest Service and the Madera Sugar Pine Company started in August, 1913. The objects to be effected were, from the viewpoint of the public, twofold: to preserve a strip of uncut timber along the road from Wawona to the summit of Signal Peak and by so doing maintain this popular side trip as a scenic forest drive, and to secure clear title to the United States of the timber in several small logging units which eventually will be utilized in connection with the agricultural development of the foothill region adjoining.

The Forest Service appraised the values of the timber after a thorough cruise and study of the logging conditions on the ground. Approximately 2453 acres of Company land will be traded for 2468 acres of Government land. The Company's land carries 119,875,000 board feet of timber worth $433,187; the Government's, 121,757,000 board feet worth $433,172.

# # #

FOREST NOTES 5/29/14

The annual capacity of the forest nurseries of the government is about 25 million young trees.

Cornell University recently dedicated a forestry building in connection with the state college of agriculture.

It is said that the best times of day to see forest fires from lookout stations are just after daylight and just before sunset.

The forest service has been requested to cooperate with the port authorities of Coos Bay, Washington, in planting to control shifting sand dunes.

Jack pine trees planted ten years ago in the sand hills of Nebraska are now large enough to produce fence posts. Last year the first seed was gathered from this plantation.

The agricultural experiment station at Pullman, Washington, is establishing an arboretum in which it is proposed to grow a group of each of the important timber trees of the temperate zone.

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UNITED STATES DEPARTMENT OF AGRICULTURE
FOREST SERVICE

(From the Forest Service, United States Department of Agriculture, San Francisco, California)

LIVESTOCK INCREASES ON
NATIONAL FORESTS

~~Livestock~~ Figures showing the number of livestock for which the Secretary of Agriculture has authorized grazing permits for the ranges on the 160 national forests during the year 1914 have just been made public. Nearly 11,000,000 animals can be grazed, including nearly two million head of cattle and horses, nearly nine million head of sheep and goats, and about 65,000 hogs. This means an increase for the current year of about 38,000 more cattle and horses, and 347,000 more sheep and goats, although the gross area of the national forests at the beginning of 1914 is almost a million acres less than at the beginning of 1913.

During 1913, according to the reports just compiled, more than 27,000 stockmen paid the Government for grazing permits on about ten million head of animals.

For several years past the carrying capacity of the national forest ranges has been slowly rising, which(forest officers say) indicates an improvement in general grazing conditions and a better utilization of the forage resources. They claim that this is due mainly to the enforcement of better methods of distributing and handling stock.

On the lands recently acquired by the federal government

(From the Forest Service, United States Department of Agriculture, San Francisco Office)

LANDS IN LASSEN FOREST

OPENED TO HOMESTEAD ENTRY

The Secretary of Agriculture has approved the reports of experts of the Forest Service and of the Bureau of Soils on the Hat Creek land classification project within the Lassen National Forest. The project embraces an area of 91,675 acres, of which 25,246 acres are in private ownership. An area of 58,274 acres was classified as non-agricultural, and the final classification as to 6,745 acres was suspended. This area will be re-classified after the sale and removal of the timber in order to determine what part of it is agricultural.

An area of 1,410 acres was found to be chiefly valuable for agriculture under present conditions and will be listed with the Department of the Interior for restoration to entry under the Forest Homestead Law at once. These lands are in Township 32 north, 4 and 5 east; 33 north, 5 east; 34 north, 4 and 5 east; 36 north, 3 east.

No information can be given at the present time as to when the lands will be restored to entry. When they are restored to entry notice to that effect will be posted in the Sacramento U. S. Land Office and advertised in the local newspapers.

# # #

(From the Forest Service, United States Department of Agriculture, San Francisco Office)

CONGRESS ADDS TO

NATIONAL FOREST

Nearly 17,000 acres have just been added by act of congress to the Caribou national forest, Idaho. This is one of the first of such additions through congressional action, and is the largest so far made by direct legislation.

Those who have followed the national forest movement in this country will recall that most of the forests have been created through presidential proclamation, which set aside for timber growing or for water protection certain areas of the public domain. In March, 1907, however, congress passed a law that no further additions should be made to the national forest areas in the states of Colorado, Idaho, Montana, Oregon, Washington, and Wyoming, except through congressional action.

Since July, 1909, residents of the city of Montpelier, Idaho, have been petitioning to have this 17,000 acres added to the Caribou national forest, because the area includes the watershed of the stream which furnishes the city's water supply. Not being within a national forest, the tract was given over to unregulated grazing and other usage which resulted in stream pollution and became a serious menace to health. The citizens of Montpelier at several times subsequent to their first efforts in 1909 renewed their petition; and the act just passed represents the successful outcome of their efforts.

(From the Forest Service, United States Department of Agriculture, San Francisco Office)

FOREST FIRE SEASON

GETS EARLY START

The first reports of forest fires have begun to come in to Washington from the national forests, and they indicate to the federal officers an early start of the fire season with unfavorable weather conditions from the very beginning. In the northwest there was less snow on the mountains at the end of the winter than for many years past. Railroad rights of way which were last year deep in snow are reported clear now and dry enough to burn readily.

From the Canadian border to Mexico the reports are similar, and there have already been extensive fires in California and Arizona.

The chief forester reports, however, that the fire-fighting forces of the Service are organized better than ever before, particularly in respect to the fire detection system of lookout stations. By means of these stations fires are reported quickly and accurately so that the control forces may be on the ground at the earliest possible moment.

In those states where the gravest danger threatens, especial efforts are being made by the government foresters and by cooperative fire protection associations organized among timberland owners to secure care with fire on the part of campers, prospectors, loggers, and by railroads. The northwestern forestry and conservation association with headquarters at Portland, Oregon, is one of the leaders in this campaign.

(From the Forest Service, United States Department of Agriculture, San Francisco Office)

LITTLE FARM LAND FOUND IN
ANGELES NATIONAL FOREST

Reports submitted by experts of the Bureau of Soils and the Forest Service on the Cajon and Tejunga land classification projects, on the Angeles National Forest, have been approved by the Secretary of Agriculture. The total area of the Cajon project is 143,333 acres, of which 32,806 acres are privately owned. None of this land is classified as agricultural under present conditions, although final classification of 7,147 acres was suspended pending further consideration of watershed features.

The total area of the Tejunga project in round numbers is 164,000 acres, of which 21,800 acres are in private ownership. 141,772 acres were classified as non-agricultural, and final classification was suspended as to 767 acres pending the result of further investigation.

Only 310 acres, situated in Townships 2 and 3 north, range 14 west, were classified as chiefly valuable for agriculture under present conditions. These areas will be listed with the Department of the Interior to be opened to entry by the first qualified applic at the Los Angeles Land Office after the land is restored to entry.

# # # # #

within the Appalachian region of the east, regulated grazing has been undertaken this year on six distinct areas. The local stock owners who had previously used the land under lease from the former owners have readily accepted the change of ownership and appear to be favorably impressed with the methods employed by the Forest Service for grazing purposes. While the number of all animals authorized to graze upon these southern Appalachian forests is not large, it is the belief of the Forest officers in charge that under careful supervision the lands will support more stock than they have in the past and that there will be considerable improvement in the individual animals with a constant increase in meat production.

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(From the Forest Service, U. S. Department of Agriculture, San Francisco Office.)

COOPERATIVE FOREST FIRE

PROTECTION ASSOCIATION FORMED

Thirty settlers living within and adjacent to the Sierra National Forest have taken steps to form a cooperative association with the object of preventing fires set for clearing land from getting beyond control. With land clearing put upon a communal basis, the Sierra rangers expect a much smaller percentage of fires than formerly to escape from control.

When necessary, officers of the Sierra Forest will be detailed to help the settlers and supervise the brush burning.

(From the Forest Service, U. S. Department of Agriculture, San Francisco Office.)

PREPARING FOR EXCEPTIONAL
FIRE SEASON

In order to provide for exceptional or emergency fire conditions in case they occur during the coming summer, Forest Supervisor Kelley, of the Eldorado National Forest, has made advance arrangements at Auburn and Sacramento for the hiring and transportation of such fire fighters as may be needed.

In case of fires occurring on either the Eldorado or Tahoe Forests too big to be handled by the forest officers and local residents, from 25 to 50 men will be sent from Auburn and from 50 to 200 men from Sacramento. Mr. J. W. Morgan will act as the government agent at Auburn, and the Sheriff of Sacramento County will assist at Sacramento.

If serious fires occur near the line of the Southern Pacific, fire fighters will be transported by special trains; otherwise automobiles will be used.

Forest officers believe that this advance preparation can be depended upon to keep the fire damage at a minimum, even under the worst conditions.

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FOREST NOTES 5/11/14

Angora goats have been used with profit to keep fire lines clear of inflammable vegetation on national forests in California.

Last year the fire loss on the Canadian timber reserves was the smallest ever known, only one-fiftieth of one per cent of the area being burned over.

Zentaro Kawase, professor of forestry at the imperial university of Tokio, Japan, has been making a tour of the national forests of this country to learn the government's methods of selling timber and of reforestation.

More than 858,000 young trees are being set out this spring on national forests in Utah and southern Idaho, and the season is reported as particularly favorable to their successful growth.

Armstrong lake, within the Beartooth national forest, Montana, is said to rival the famed Lake Louise of the Canadian Rockies. It lies at an elevation of 7,000 feet surrounded by towering mountains. A good road which can be traveled in half a day by automobile connects it with the railroad at Billings. A rustic hotel has recently been completed, and many trails make the surrounding region accessible.

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FOREST NOTES 5/23/14

Four buffalo calves have just been born on the Wichita national forest, bringing the herd up to 51.

In cooperation with the weather bureau, forest rangers are to measure snow depths in the western mountains.

Students of the Oregon agricultural college are working at the forest nursery on the Siuslaw forest. The arrangement is said to be mutually satisfactory since the students gain experience in forest nursery practice and their assistance lowers the cost of nursery work.

Manufacturers have found that red alder from the Pacific coast is a suitable material for clothespins. Alder makes a white, smooth, springy pin. As a result of this fact, a clothespin factory, said to be the first on the Pacific coast, may be established at Portland, Oregon.

The city of Tacoma, Washington, has entered into a cooperative agreement with the forest service for the protection of the source of its water supply, the watershed of the Green river, which lies within the Rainier national forest. The two agencies working together will protect this stream from the results of forest destruction by fire or by other agencies.

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(From the Forest Service, United States Department of Agricul

UNITED STATES DEPARTMENT OF AGRICULTURE
FOREST SERVICE 170-F

THE FUEL VALUE OF WOOD

The fuel value of two pounds of wood is roughly equivalent to that of one pound of coal. This is given as the result of certain calculations now being made in the Forest Service laboratory which show also about how many cords of certain kinds of wood are required to obtain an amount of heat equal to that in a ton of coal. Certain kinds of wood, such as hickory, oak, beech, birch, hard maple, ash, elm, locust, longleaf pine, and cherry, have fairly high heat values and only one cord of seasoned wood of these species is required to equal one ton of good coal. It takes a cord and a half of shortleaf pine, hemlock, red gum, Douglas fir, sycamore, and soft maple to equal a ton of coal, and two cords of cedar, redwood, poplar, catalpa, Norway pine, cypress, basswood, spruce, and white pine.

Equal weights of dry, non-resinous woods, however, are said to have practically the same heat value regardless of species, and as a consequence it can be stated as a general proposition that the heavier the wood the more heat to the cord. Weight for weight, however, there is very little difference between various species; the average heat for all that have been calculated is 4,600 calories, or heat units, per kilogram. A kilogram of resin will develop 9,400 heat units, or about twice the average for wood. As a consequence resinous woods have greater heat value per pound than non-resinous woods, and this increased value, varied, of course,

with the resin content.

The available heat value of a cord of wood depends on many different factors. It has a relation not only to the amount of resin it contains but to the amount of moisture present. Furthermore, cords vary as to the amount of solid wood they contain even when they are of standard dimensions and occupy 128 cubic feet of space. A certain proportion of this space is made up of air spaces between the sticks, and this air space may be considerable in a cord made of twisted, crooked and knotty sticks. Out of the 128 cubic feet a fair average of solid wood is about 80 cubic feet. It is pointed out, however, that heat value is not the only test of usefulness in fuel wood, and since 95 per cent of all wood used for fuel is consumed for comestic purposes, largely in farm houses, such factors as rapidity of burning and ease of lighting are important. Each section of the country has its favored woods and these are said to be, in general, the right ones to use. Hickory, of the non-resinous woods, has the highest fuel value per unit volume of wood, and has other advantages. It burns evenly and, as housewives say, holds the heat. The oaks come next, followed by beech, birch, and maple. Pine has a relatively low heat value per unit volume but has other advantages; it ignites readily and gives out a quick hot flame but one that soon dies down. This makes it a favorite with rural housekeepers as a summer wood, because it is particularly adapted for hot days in the kitchen.

The fuel qualities of chestnut adapt it particularly to work in brass foundries, where it gives just the required amount of heat and is therefore in favor. Coastwise vessels in Florida pay twice as much for Florida buttonwood as for any other, because it burns with an even heat and with a minimum amount of smoke and ash.

The principal disadvantages of the resinous pines is their oily black smoke.

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(From the Forest Service, U. S. Department of Agriculture, San Francisco Office.)

NEWS NOTES OF CALIFORNIA

NATIONAL FORESTS

The District Forester at San Francisco has approved a contract for the sale of approximately 19,000,0 feet of yellow pine, white fir and cedar to the California Lumber Company of Loyalton. The timber is located on the watersheds of Smithneck and Badenoch Creeks within the Tahoe National Forest. Cutting will begin this season. The contract allows 5 years for its completion.

14,760,000 feet of pine, fir and cedar on the Plumas National Forest are advertised for sale. Bids will be received by the District Forester at San Francisco to and including June 26, 1914.

A tract of 27,000 acres supporting 315,640,000 feet of timber has been cruised by a party of rangers on the Modoc National National Forest and will be offered for sale. The timber is situated on the plateau immediately north of Pitt River and is near the proposed extension of the Fernley and Lassen branch of the Southern Pacific to Klamath Falls, Oregon.

In order to control insect depredations this spring, 2,130 infested trees were cut on the Sierra,

California and Trinity National Forests. The treatment consisted of felling the trees and burning the bark which contains the insects. The work was discontinued about May 1 because the warm weather caused the insects to emerge from the trees, and also because the conditions for burning the bark became dangerous.

During the month of May, 1914, the National Forests in California produced an income of $27,119.47 derived from the sale of timber, grazing privileges and special uses.

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(From the Forest Service, U. S. Department of Agriculture, San Francisco Office.)

FOREST AND GAME

PROTECTION

In order to impress upon hunters the need of care with their camp fires the California Fish and Game commission has adopted as a decoration for the back of the hunting license just issued, an engraving of a camper putting out his camp fire before he leaves it.

The picture shows him in the act of shoveling earth on the fire which he has already quenched with water. The title "Forest and Game Protection" is intended to call attention to the fact that forest fires destroy game.

The plate was furnished to the commission by the U. S. Forest Service.

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(From the Forest Service, U. S. Department of Agriculture, San Francisco Office.)

GOVERNMENT TO SECURE

VANDERBILT FOREST

The national forest reservation commission has just approved the purchase of the Pisgah Forest from the estate of the late George W. Vanderbilt, at an average price of five dollars an acre. The tract consists of 86,700 acres and the total cost is therefore $433,500. The price paid is less than the average for other tracts already acquired although the Pisgah Forest has been developed by its former owner into one of the best forest properties in the country.

This is the second time that the commission has had the purchase of this tract under consideration. Once before during Mr. Vanderbilt's lifetime the question of its purchase was taken up, but the commission did not deem it advisable to purchase it at that time.

The tract includes portions of Transylvania, Henderson, Bencombe, and Hayward counties, in North Carolina. It covers the entire eastern slope and portions of the northern and western slopes of the Pisgah range, one of the most prominent of the southern Appalachians. Its forests influence for the most part tributaries of the French Broad river which unites with the Holstein river at Knoxville,

Tennessee, to form the Tennessee river.

Mrs. Vanderbilt Makes Offer

Mrs. Vanderbilt offered the tract at a much lower figure than that at which it was held by her husband, and her letter to the secretary of agriculture, one of the members of the commission, gives her reasons for making the tender of the Pisgah Forest to the government. Mrs. Vanderbilt's letter follows:

May 1, 1914.

The Honorable, the Secretary of Agriculture,

Washington, D. C.

Sir:-

I now confront the question of what disposal I shall make of Pisgah Forest, which, under the terms of my late husband's will, has passed to me without qualification or condition. This letter constitutes my formal offer for the sale of Pisgah Forest to the Government for National Forest purposes. Should the Government fail to acquire it, I must dispose of Pisgah Forest in some other way. I hope earnestly that, in view of the terms of my offer, no such contingency may arise.

Mr. Vanderbilt was the first of the large forest owners in America to adopt the practice of forestry. He has conserved Pisgah Forest from the time he bought it up

to his death, a period of nearly twenty-five years, under the firm conviction that every forest owner owes it to those who follow him to hand down his forest property to them unimpaired by wasteful use. I keenly sympathize with his belief that the private ownership of forest land is a public trust, and I probably realize more keenly than any one else can do how firm was his resolve never to permit injury to the permanent value and usefulness of Pisgah Forest. I wish earnestly to make such disposition of Pisgah Forest as will maintain in the fullest and most permanent way its national value as an object lesson in forestry, as well as its wonderful beauty and charm; and I realize that its ownership by the Nation will alone make its preservation permanent and certain.

Accordingly I have decided to make as large a contribution as I can, in order to help bring this result about. I offer Pisgah Forest at a total price over two hundred thousand dollars below that on the basis of which negotiations were entered into with the Government before my husband's death, my offer to the Government of Pisgah Forest now being at a price of five dollars per acre.

I make this contribution towards the public ownership of Pisgah Forest with the earnest hope that in this way I may help to perpetuate my husband's pioneer work in forest conservation, and to insure the protection and the use and

enjoyment of Pisgah Forest as a National Forest, by the American people for all time.

In the event that my offer is accepted, I shall be glad for the Government to assume control of Pisgah Forest as soon as it may desire. In the same event, it would be a source of very keen gratification to me if the tract retained, as a National Forest, the title of "Pisgah Forest", which my late husband gave it.

Very truly yours,

(Signed) Edith S. Vanderbilt.

Government Will Continue Name

In accordance with Mrs. Vanderbilt's desire, the national forest reservation commission will retain the name of "Pisgah Forest"; in fact, the general area, in which this forest is located and in which other purchases may be made, is already designated the "Pisgah Area". It is proposed also to make it a game refuge for the preservation of the fauna of the eastern mountains. It is particularly well suited to this purpose since it is already well stocked with game and fish, including deer, turkey, and pheasant, and in the streams rainbow trout, and brook trou with which they have been systematically stocked from year to year.

On approximately four-fifths of the area there is a

timber contract which provides for the moving of certain portions of the merchantable stand. It is already provided, however, that this removal shall be in accordance with the best forest practices, so that there is not only no danger of forest destruction but provision is made for a natural restocking which should be an improvement on the present stand. The area contains improvements in the form of buildings, roads, and trails, which will greatly help in the administration of the forest by the government.

Members of the commission look upon this as the best purchase which has yet been authorized, because the forest is in the finest possible condition and less than three-tenths of one per cent can be classed as burned-over land. The price too is lower than the average paid for all lands which have been acquired heretofore.

With this purchase, and with others just approved, the total area approved for purchase under the Weeks law in the eastern mountains is 1,077,000 acres. The officers of the commission are the secretaries of war, agriculture, and the interior, Senators Gallinger of New Hampshire and Smith of Maryland, and Congressmen Lee of Georgia and Hawley of Oregon.

# # #

UNITED STATES DEPARTMENT OF AGRICULTURE
FOREST SERVICE

(From the Forest Service, United States Department of Agriculture, San Francisco Office)

MAIL CARRIERS TO
REPORT FOREST FIRES

Word is received from Washington that the practice, begun in 1912, of having forest fires along mail routes reported to State firewardens by the Government mail carriers will be continued during the coming fire season.

Forest officers believe that there are possibilities in this form of patrol which hitherto have not been fully taken advantage of by the State. Oftentimes the mail carriers have reports to make but find no one ready to act on them, and fires that might easily have been extinguished are thus permitted to grow to large proportions.

An effort will be made this season to have the fire wardens meet the carriers personally and arrange a reporting system and hold themselves in readiness to take whatever action is required as soon as reports are received.

# # #

UNITED STATES DEPARTMENT OF AGRICULTURE
FOREST SERVICE

(From the Forest Service, United States Department of Agriculture, San Francisco Office)

NATIONAL FORESTS SHOW SUBSTANTIAL
INCREASE IN LIVESTOCK CARRYING CAPACITY

The authorizations of the Secretary of Agriculture for all the national forests show a net increase for the season of 1914 of 38,120 cattle and horses, 6,110 swine, and 346,598 sheep and goats over the numbers authorized for the season of 1913.

These increases, according to official statement, are the direct result of improvement in range conditions on the national forests through government regulation. The total numbers of livestock authorized for 1914 are 1,891,119 cattle and horses, 65,645 swine, and 8,867,906 sheep and goats.

On the California national forests grazing applications will be received for 207,612 cattle and horses, 8,490 swine, 1 521,490 sheep and goats; which is a substantial increase over the authorizations for 1913.

# # # #

UNITED STATES DEPARTMENT OF AGRICULTURE
FOREST SERVICE

(From the Forest Service, United States Department of Agriculture, San Francisco Office)

MODELS SHOW
PROPER LUMBERING

Two models which show how the government sells its timber have just been prepared in Washington for display at the Forest Products Exposition to be held in Chicago April 30 to May 9 and in New York May 20 to 30. These models represent an acre of western yellow pine land in a national forest of the Southwest, before and after logging.

In the model showing the stand before the lumberman goes into it the trees range from those only a few years old to large, over-mature, stag-headed individuals more than ready for the axe. In the second model the mature trees and all others larger than a certain diameter have been cut down and made into logs and cordwood. In this, as in all government sales, the stumps are cut low, to avoid unnecessary waste, logs are taken to a small diameter well up into the tree, and such material as is not fit for lumber is converted into cordwood. Together, the models show the care which the government requires of lumbermen in felling old trees so that the young growth is not injured. The brush is piled in heaps for burning after the lumber has been removed, in order that the fire menace which foresters say usually follows lumbering may be done away with. The models are on a scale of about one inch to five feet, so that trees approximately 100 feet tall are about 20 inches high in the models.

It is the intention of the Forest Service to have these models set forth certain points in regard to the timber sales conducted by the Government. They will demonstrate, in the first place, that the timber on National Forests is for use; placards tell how it is sold to the highest bidder when it is wanted for commercial purposes and how it may be given away to local settlers and prospectors for developing homesteads or mines. The models themselves indicate that the timber is cut in such way as to eliminate all avoidable waste of wood and secure a continuance of the forest crop not only for timber production but for protection of the soil. They further show the fundamental principles applicable to many logging operations, - that the mature and over-mature trees should be removed, that thriftily growing young trees should be left to produce seed and insure reproduction of the stand, and that the young growth should be protected from damage in lumbering operations.

The models are supplemented by a graphic chart which shows, by pictured piles of money and by conventional trees of graded size, the increase of timber sales on national forests from 1905 to 1913, inclusive. In 1905 the timber sold from the national forests aggregated 96,000,000 board feet, which brought the government no more than $85,000. Three years later the amount of timber sold increased to nearly 390 million board feet and the money received rose to $735,000. In 1911 830 million board feet sold for more than $2,000,000; and in 1913 more than two billion feet brought in contracts amounting to $4,500,000. Not all this money was received in any one year, because national forest timber is sold on contracts which range from one to twenty-five years and it is paid for as cut.

# # #

UNITED STATES DEPARTMENT OF AGRICULTURE

FOREST SERVICE

DISTRICT 5

ADDRESS REPLY TO
DISTRICT FORESTER
AND REFER TO:

FIRST NATIONAL BANK BUILDING
SAN FRANCISCO, CALIF.

FOREST NOTES 6/6/14

The New York state forest nurseries have a capacity of 28 million young trees a year.

Approximately 750 acres on the Oregon national forest were planted with young trees this spring.

The state of Pennsylvania celebrates two arbor days each year - one for spring planting and one for the fall - in April and October respectively.

On the Deerlodge national forest in Montana one lookout station has the record of reporting accurately, by distance and direction, a fire that was sixty miles away.

Nearly 3 million young trees are being set out this spring on the national forests of northern Idaho and Montana. On the St. Joe national forest in Idaho three thousand acres will be planted.

Ranchers within and adjacent to the Sierra national forest, California, have formed a cooperative association for the prevention of forest fires. They need to use fire in clearing land for farming, and will do it on a community basis, with all members present to prevent the fires' spread.

# #

(From the Forest Service, United States Department of Agriculture, San Francisco Office)

CAMPERS INSTRUCTED REGARDING
GAME LAWS AND FIRE RULES

"Be sure your match is out. Break it in two before you throw it away."

The forest service has thus amended rule one of the familiar"Six Rules for the Prevention of Fire in the Mountains", believing that in this form it will remind inexperienced campers to pinch out the glowing stems of their matches, as mountaineers instinctively do.

Cards, vest pocket size, bearing the six rules on one side and the State game laws on the other are now being distributed by forest officers.

(From the Forest Service, United States Department of Agriculture, San Francisco Office)

LUMBER COMPANIES ADOPT

FOREST FIRE PREVENTION PLANS

With the approach of the forest fire season, three lumber companies whose holdings are in the Eldorado national forest have made arrangements with the United States Forest Service for the cooperative protection of their timber.

A lookout point is being equipped and will be manned from July 15 until the fall rains set in, as a part of the protection system of the C. A. Smith Timber Company.

The Danaher Pine Company, of Camino, under the supervision of Ranger M. D. Morris has had a crew of men employed for some time building fire lines around their logging areas. In addition to clearing the lines all snags and dead trees are felled on both sides of the line back for a distance of 300 to 500 feet. When the forest cover becomes dry enough to burn, the cleared strip will be carefully burned over. By this means the company and the forest officers believe that all liability of fire escaping during the summer from the slashings to the surrounding forest will be eliminated.

The California Door Company besides rendering a large amount of incidental cooperation to the Forest Service will employ a patrol throughout the season who will patrol, under the direction of the Forest Supervisor, the country in which the Company's timber interests lie.

# # #

(From the Forest Service, United States Department of Agriculture, San Francisco Office)

ORTMEN'S AID SOUGHT
AINST FOREST FIRES

Because of the fact that many forest fires are set through the carelessness of hunters, campers, and others who go into the woods for recreation, the forest service has taken up with manufacturers of fire-arms and ammunition the question of a cooperative arrangement through which purchasers and users of guns and cartridges shall be reminded of the fire danger.

It has been pointed out that in the lumber regions of the northwest, for example, manufacturers and other business men have been having printed or stamped on their stationery and pay checks various crisp, catchy statements about the loss which the public suffers through the decreased demand for labor and decreased money in circulation, if timber - which is the source of many of the northwest's industries - is burned up.

It has also been pointed out that in the east, particularly, many forest fires are started by the carelessness of hunters who drop burning matches, cigar or cigaretts stumps, or pipe coals in the woods, or perhaps build a fire which is left burning when the hunter goes on. Forest fires, of course, greatly injure the interests of sportsmen by robbing the birds of their proper cover. They also impair the food supply of both birds and big game, through the destruction of the undergrowth which furnishes browse, berries, and other f

The eastern woods are exposed to danger from fires principally in the spring and fall, when most of the trees are bare and the leaves on the ground are dry. The spring fires, many of which are due to trout fishermen, may destroy the eggs of game birds and even young birds themselves. Since trout fishermen are likely to hunt in the fall, the same individuals, if careless, may be a source of danger at both seasons.

It is suggested that the manufacturers of arms and ammunition ought to be sufficiently interested in the matter of perpetuation of game to be willing to help in the campaign against forest fires. This help may come through the printing of some brief fire warning on cartridge boxes, or some slip to go with any hunting or camp supplies which are furnished. Several manufacturers have already expressed their interest in the matter and their willingness to help.

# # # #

(From the Forest Service, United States Department of Agriculture, San Francisco Office)

FOREST PROBLEMS

UNDER INVESTIGATION

What proportion of the standing timber should be cut from a given area in order to leave it in the best condition for future continuous production will be determined scientifically by series of experiments to be conducted by the Forest Service. A number of small areas have been laid off on a timber sale in the Plumas forest, and varying proportions of the stand will be cut on each.

Periodic observations and measurements will give accurate data from which conclusions can be drawn. The effect of fire on young forest growth, the effect of brush cover on stream-flow, the best season for planting young trees, and tests of various species of trees under various conditions are among the topics listed for study.

# # # # #

UNITED STATES DEPARTMENT OF AGRICULTURE
FOREST SERVICE

(From the Forest Service, United States Department of Agriculture, San Francisco Office)

TREATMENT FOR STOCK POISONING

RECOMMENDED BY DEPARTMENT OF AGRICULTURE

Practical demonstrations in the treatment of cattle for larkspur poisoning will be made by Forest officers on 10 or 12 different National Forests in the Rocky Mountain district this summer. The officers will be furnished with a standard equipment of syringes and medicines, and subcutaneous injections of Physostigmin salicylate, 1 grain; Pilocarpin hydrochlorid, 2 grains; Strychnin sulphate, ½ grain will be used on animals weighing 500 to 600 lbs., doubling the dose for large steers and cows weighing 1,000 lbs. or more.

Experiments with this treatment, which is discussed in a recent "Farmers' Bulletin" No. 531 of the U. S. Department of Agriculture, have shown have shown about 96% of success and it is expected that stockmen will readily adopt the method as its merits become more generally known.

# # # #

1914

(From the Forest Service, United States Department of Agriculture, San Francisco Office)

ANNUAL CONSUMPTION OF WOOD BY THE
WOOD MANUFACTURING INDUSTRIES

Statistic have been complied by the Forest Service which show for the first time precisely how the lumber produced in this country is utilized. About 45 billion feet of lumber of all kinds is the annual production in the United States; of this nearly 25 billion feet, board measure, are further manufactured, the other portion remaining for rough construction lumber and for similar purposes. This is exclusive of material which reaches its final use in the form of fuel, railroad ties, posts, poles, pulpwood, cooperage, wood distillates, and the barks and extracts demanded by the tanning industry.

The work of collecting and compiling the figures extended over a considerable period and was carried out state by state; but as one full year was made the basis of statistics in each state, the total is a fair average of the use of lumber in further manufacture in the whole country. Between 50 and 60 per cent of the lumber produced is subject to further manufacture. In preparing the figures in this way, however, it should be remembered that considerable material reaches shops and factories in the form of logs, bolts, and billets without having passed through sawmills; and while this material is included in these

statistics this fact should be remembered in comparing the statistics with those of lumber production.

Nearly or quite 100 different woods are used in this country under their own names, while an unknown number find their way to shops and factories without being identified or separately listed, except under general names. In quantity the softwoods, the needle-leaf or coniferous trees, are most important, but there are a greater number of species among the hardwoods, or broadleaf trees. Yellow pine comes first with more than 8 billion feet, followed by white pine with 3 billion, and Douglas fir with a little more than 2 billion. It should be understood, however, that the term "yellow pine" includes several species the three most important of which are longleaf, shortleaf, and loblolly. Oak, including all species, has nearly 2 billion feet and is the most important hardwood. Maple comes next.

Dogwood comes about halfway down the list with more than 7 million board feet, and of those species mentioned Turkish boxwood comes last with less than 30 thousand feet, followed by many others too insignificant to list but making a total of all kinds of more than a million feet. Of the native species, laurel, holly and yucca fall very near the foot of the list in relative quantities used.

Fifty-five principal industries use wood as raw material. Their relative importance is hard to indicate, because

quantity alone is not in all cases a criterion of value of an industry to the community in which it is situated, nor to the country as a whole.

More than one-half of the total consumption consists of planing-mill products, the largest items of which are flooring, siding, ceiling, and finishing. The next industry, in point of quantity of wood used, is the manufacture of boxes and crates. Nearly four times as much wood is demanded by makers of boxes and crates as by the builders of steam and electric cars, which come next, and five-fold the amount that goes into furniture, which in turn leads vehicle manufacture. Vehicles demand surprisingly large supplies of wood, and much of it must be of a high class in order to meet requirements for frames, gears, and bodies.

Chairs, listed separately from furniture, come after novelties and supplies for dairymen, poultry keepers, and apiarists, and just before handles, and musical instruments. About midway down the list come pumps and wood pipes. Among the products important enough to list separately are canes and umbrella sticks, brooms, firearms, artificial limbs, and tobacco pipes.

The apportionment of wood among the various industries, grades from planing-mill products, which take most, down to aeroplanes and dry kilns, at the bottom of the list.

# # #

(From the Forest Service, United States Department of Agriculture
San Francisco Office)

NATIONAL FOREST TIMBER

SOLD TO MATCH COMPANY

Bids were opened in the office of the District Forest at San Francisco last week for the sale of approximately 14,000,[illegible] feet of timber, chiefly sugar pine, on the Plumas National Forest near Sterling City, California. The sale was awarded to the Diamond Match Company of Chico.

Logging will commence immediately and will be conducted in connection with the cutting of adjacent timber owned by the Company. The contract runs until November 30, 1915.

# # #

UNITED STATES DEPARTMENT OF AGRICULTURE
FOREST SERVICE

(From the Forest Service, United States Department of Agriculture
San Francisco Office)

1913 A RECORD YEAR IN
TIMBER PRESERVATION

The most notable progress yet recorded in the chemical treatment of timber to prevent decay was made in 1913, according to a report recently issued by the American wood preservers' association in cooperation with the forest service of the department of agriculture.

The report states that 93 wood preserving plants in 1913 consumed over 108 million gallons of creosote oil, 26 million pounds of dry zinc chloride, and nearly 4 million gallons of other liquid preservatives. With these the plants treated over 153 million cubic feet of timber, or about 23 per cent more than in 1912. The output from additional plants unrecorded would increase the totals given.

Impregnation of wood with oils and chemicals to increase its resistance to decay and insect attack, the report goes on to say, is an industry which has become important in the United States only in recent years. In Great Britain and most of the European countries practically every wooden cross-tie and telephone or telegraph pole receives preservative treatment. In the United States less than 30 per cent of the 135 million cross-ties annually consumed are treated, and the proper treatment of an annual consumption of 4 million poles may be said to have scarcely

commenced.

Real progress in the United States dates from 1832, when the Kyanizing process, using bichloride of mercuty, was developed. In 1837 two other processes were introduced: the Burnett process, using zinc chloride, and the Bethel process, using coal tar creosote. These last processes are very largely in use today.

The idea of timber preservation at first made very slow growth in this country, on account of the large supply of cheap and durable timbers and the general disregard shown toward economy in the use of natural resources. In 1885 there were only three pressure plants in the United States; and in 1895 only 15. Since then, however, the industry has grown rapidly; in 1913 there were 117 plants.

# # # # #

(From the Forest Service, United States Department of Agriculture, San Francisco, California)

STATE RECEIVES $91,000

FROM NATIONAL FORESTS

Between July 1, 1913, and June 30, 1914, receipts from the National Forests in California amounted to $261,415.44 As compared with the previous year, grazing and special uses show an increase, while the timber and water-power industries show a slight falling off.

Thirtyfive percent of the receipts from the sale of National Forest resources is available in California. Of this, twentyfive percent is paid into the State Treasury, to the credit of the counties in which national forests are located, for the benefit of the school fund. The remaining ten percent is expended by the Government on public roads in the forest regions.

The road fund will amount to $26,141.54 and the school fund will receive $65,353.86.

Expenditures, the chief item of which is for protection, are largely in excess of receipts.

# # #

(From the Forest Service, United States Department of Agriculture, San Francisco Office)

UNITED STATES COOPERATES

WITH MONTANA AGAINST FOREST FIRES

Cooperative agreements involving the forest service, the State of Montana, and the Northern Pacific Railroad have just been renewed so that they will extend through the fiscal year beginning July 1, and ending June 30, 1915.

The agreement with the state of Montana provides that federal and state patrolmen shall cooperate to form one single force for handling forest fires. This force, in any locality, acts under the direction of the forest supervisor in charge of the nearest national forest. This arrangement is entered into, according to the agreement, so as "to secure the greatest efficiency and avoid duplication of patrol". The agreement applies to all government and state lands lying within the exterior boundaries of the national forests in Montana.

The number of patrolmen supplied by the state is in proportion to the acreage of state land within each national forest. No patrolman receives less than a certain minimum wage, and appointments by the State must be approved by the district forester. State patrolmen are made federal "forest guards", and are employed particularly during the four months deemed by the district forester to be the ones most likely to have forest fires.

All lands within the various forests are thus patrolled against fire. The agreement provides that each patrolman, federal and state, "shall keep vigilant lookout for forest fires and shall make every possible effort to extinguish them whether on lands belonging to the state or to the government or on lands adjacent thereto where the fire threatens such lands.

Besides the state and other lands, there are scattered through the national forests in Montana many tracts, usually in alternate sections, owned or claimed by the Northern Pacific Railroad. The agreement between this railroad and the forest service provides for the same kind of cooperative patrol that exists between the government and the state of Montana.

A third agreement, a continuing one, provides for cooperation between the forest service and the state under the so-called Weeks Law for protecting state and private lands on the watersheds of navigable streams. The government allots the state the sum of $3,500 a year, which is expended for the salaries of federal patrolmen, and the state agrees to expend at least an equal amount for fire protection purposes of any character.

# # # #

161-F

(From the Forest Service, United States Department of Agriculture
San Francisco Office)

ORGANIZES EMERGENCY

FIRE FIGHTING FORCES

In order to prepare for a forest fire emergency similar to that which nearly destroyed the town of Sisson recently U. S. District Forester Coert DuBois is making arrangements for the quick transportation of large bodies of men to be shipped from centers of population whenever the local labor supply is no longer arequate to handle the situation.

For this work, strong and able-bodied men are needed. Their personal equipment should include overalls and heavy shoes. The Government provides board, blankets and tools, and furnishes transportation from the place of employment to the fire-line and return. Wages are paid at the usual rate of 25¢ an hour for time spent during travel and while actually at work; this rate being sometimes increased in favor of experienced local men or organizations in order that the Government may be certain of securing their services promptly. All employees are now also protected by the federal disability act, if injured while on duty.

From now until the first rains is the height of the forest fire season, according to Mr DuBois, and it cannot be foreseen when emergency forces will be needed. The Sisson fire covered less than 3,000 acres; but it required a great number of men to hold in check the backfires set in order to protect the town. Hot, windy weather at any time during the remainder of the dry season may produce a similar emergency, and DuBois intends to be ready for it in case it occurs.

UNITED STATES DEPARTMENT OF AGRICULTURE
FOREST SERVICE

(From the Forest Service, United States Department of Agriculture, San Francisco Office)

CALIFORNIA NATIONAL FORESTS YIELD

57,000,000 FEET PER ANNUM

Timber to the amount of 57,607,000 board feet, valued at $121,012.58, was cut from the National Forests in California during the fiscal year ~~xxxxx~~ending June 30, 1914.

Of this amount 8,416,000 board feet was granted free to local residents for domestic use, and 593,000 board feet cut by settlers and farmers for use in developing their farms and homesteads. The latter was sold at rates of 25 cents per cord or 50 cents per thousand board feet, which represents the actual cost to the Forest Service of administering the sales. The remainder of the timber cut - amounting to 48,598,000 board feet - was sold for the general market at commercial rates.

The total cut and value from each of the 19 National Forests within the State was as follows:

Angeles	1,414,000	board ft.	-	$2,203.08
California . . .	1,151,000	"	"	2,402.59
Cleveland	165,000	"	"	352.22
Eldorado	1,126,000	"	"	2,435.59
Inyo	1,896,000	"	"	4,349.09
Kern	1,118,000	"	"	2,041.12
Klamath	1,880,000	"	"	2,120.02
Lassen	1,054,000	"	"	2,751.62
Modoc	3,760,000	"	"	7,303.08
Mono	684,000	"	"	2,199.35
Monterey	280,000	"	"	986.22
Plumas	8,491,000	"	"	26,137.44
Santa Barbara . .	343,000	"	"	1,058.06
Sequoia	2,407,000	"	"	4,534.14
Shasta	6,615,000	"	"	13,341.76
Sierra	8,482,000	"	"	14,538.98
Stanislaus . . .	3,222,000	"	"	6,964.50
Tahoe	11,081,000	"	"	20,741.73
Trinity	2,438,000	"	"	4,551.99
TOTALS . .	57,607,000	"	"	$121,012.58

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UNITED STATES DEPARTMENT OF AGRICULTURE
FOREST SERVICE

(From the Forest Service, United States Department of Agriculture, San Francisco Office)

GOVERNMENT TIMBER ON

NORTHWESTERN PACIFIC RAILROAD

The U. S. Forest Service is advertising for sale a body of timber, estimated to cut 15,000,000 feet, located on Grizzly Mountain near Zenia in the southwestern part of Trinity County. Forest officers believe that there is at present a market sufficient to justify the installation of a mill at this point. As soon as the line of the Northwestern Pacific Railroad to Eureka is completed, which will probably be within the next year, the timber will be easily accessible to outside markets; and it will then be possible, by purchasing additional National Forest stumpage adjoining, to enlarge the operation. Approximately 160,000,000 feet are immediately tributary.

The 15,000,000 feet now being advertised are estimated to cut the following per cents by species:

Sugar pine	10 per cent
Yellow pine	24 " "
Douglas fir	54 " "
White fir	10 " "
Incense cedar . . .	2 " "

~~Thereis,000,000~~ Bids will be received by the District Forester, at San Francisco, up to and including September 22.

# # #

UNITED STATES DEPARTMENT OF AGRICULTURE
FOREST SERVICE

(From the Forest Service, U. S. Department of Agriculture, San Francisco Office)

LAND IN NATIONAL FORESTS
LISTED FOR HOMESTEADS

During the past fiscal year - July 1, 1913, to June 30, 1914 - 57,762 acres of land in the National Forests in California were listed to 510 applicants under the Forest Homestead laws.

The Forest Homestead Act was passed on June 11, 1906. Since that date 256,937 acres in California have been listed to 2,476 applicants.

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UNITED STATES DEPARTMENT OF AGRICULTURE
FOREST SERVICE

(From the Forest Service, United States Department of Agricul
San Francisco Office)

LUMBER PRODUCTION

IN 1913

The production of lumber in the United States in 1913 was about three-quarters of a billion board feet less than in 1912, according to the official figures just issued by the United States Department of Agriculture.

In 1913, 21,394 mills reported a production of 38,387,009,000 board feet, as against 39,154,414,000 feet reported by 29,649 mills in 1912.

Washington heads the list with a cut of slightly more than 4½ billion feet. California is thirteenth, with a production of 1,183,380,000 feet.

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UNITED STATES DEPARTMENT OF AGRICULTURE
FOREST SERVICE

(From the Forest Service, United Sttates Department of Agriculture, San Francisco Office)

SPECIAL USE PERMITS

FOR NATIONAL FOREST LAND

District Forester Coert DuBois, of the United States Forest Service, reports that on June 30, 1914, s,599 special use permits were in effect on the national forests in California; the Angeles Forest heading the list with 787.

Most of these permits were issued for summer camps and residences, stock pastures, drift fences for handling stock, summer resorts, hotels, reservoirs, and ditches.

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UNITED STATES DEPARTMENT OF AGRICULTURE
FOREST SERVICE

(From the Forest Service, United States Department of Agriculture
San Francisco Office)

NATIONAL FOREST

TIMBER SOLD

A contract has just been issued to the Sierra Nevada Wood & Lumber Company, of Hobart Mills, California, which provides for the cutting of 1,100,000 feet, board measure, of yellow pine, 600,000 feet of white fir, and 10,000 feet of red fir, from lands within the Tahoe National Forest. A. E. Engebretseh, of Lyonsville, has contracted to cut 410,000 feet of yellow pine, sugar pine, white fir, Douglas fir, and incense cedar from an area within the Lassen Forest adjacent to his present operations.

# # # #

UNITED STATES DEPARTMENT OF AGRICULTURE
FOREST SERVICE

(From the Forest Service, United States Department of Agriculture
San Francisco Office)

BAD FOREST FIRE
SEASON CONTINUES

Because there have been no spectacular fires such as occurred last year on Mount Tamalpais and in the Santa Cruz mountains, the impression prevails in California that the season of 1914 has been a mild one in the matter of forest fires. District Forester Coe. DuBois, at San Francisco, states that this is not the case and that the season of 1914, which is not yet over, has been one of marked severity. On the National Forests in California 1049 fires have occurred, and they are still being reported at the rate of about 50 a week. Most of these fires would have caused serious damage if they had not been handled with the utmost promptness. But less than 17 per cent got sufficient start to cause any considerable damage, and 876 of them were caught and put out before they had burned a space twenty rods square. The total area burned over amounts to 45,000 acres, of which 34,000 acres are timberland. The direct damage to timber and improvements is estimated at $76,000.

As usual, a large proportion of the fires were caused by campers. The rangers were forced to make numerous arrests for violation of forest laws, chiefly the law that requires campfires to be extinguished before leaving camp. A few offenders were given jail sentences, but as a rule the minimum fine of $50 was imposed.

# # # #

As many as 72 different kinds of wood are used in the manufacture of umbrella handles, canes and whips in this country.

Authentic records show that cinders, from a forest fire in the tree tops in northern Washington this fall, were carried a distance of twenty miles.

According to the latest available figures, Pennsylvania stands fifth in the production of wood pulp and is second to West Virginia in the amount of slabs and other sawmill waste used for pulp; Maine stands third.

The better wood engravings are made almost exclusively of boxwood, and the large blocks are made of small pieces glued together. The engraving is done across the end of the grain. Japanese wood prints, on the other hand, are made on lengthwise sections of cherry wood parallel to the grain.

Throughout the national forests the rangers are posting the roads with permanent guide signs which tell distances and directions, especially at forks and cross-roads. The signs are usually put up in the winter when other work tends to be light. On some forests the rangers go on snowshoes, dragging loaded sleds and nail the signboards to the roadside trees.

# # #

UNITED STATES DEPARTMENT OF AGRICULTURE
FOREST SERVICE

(From the Forest Service, United States Department of Agriculture
San Francisco Office)

FIGHT

FOREST INSECTS

During November and throughout the winter, the government rangers in California will carry on their regular campaign against the pine beetle. There are nearly one hundred centers of insect infestation on the National Forests, only a few of which can be attended to this winter on account of lack of funds. Forest officers expect, however, to clean up an area of about 200,000 acres before spring.

The beetles work entirely in green trees or in trees that have been freshly felled. They do not breed in dry logs, but are particularly fond of trees whose growth has been checked by ground fires or otherwise. They bore into the tree as far as the soft tissue that lies between the bark and the wood, where they excavate galleries and lay their eggs. When the galleries in a tree are so numerous that they connect, the tree is girdled and dies, the needles taking on a characteristic yellow-brown color. By the time a tree has become a "sorrel top" the insects have matured and left it.

The treatment consists in locating the trees containing eggs or larvae, felling them, peeling the bark and burning it.

Are not destroyed by ground fires

It is thought by many persons that the tree-destroying insects are encouraged by the suppression of forest fires. The claim is made that the lack of fire causes debris to collect which provides a breeding-place for insects. Forest officers who have given the subject scientific study say that this claim is entirely unfounded, since at no period of its life history can the beetle be found in dry material. On the contrary, light fires which do not kill the trees but only scorch them slightly may create the most favorable conditions for insect infestation.

# # #

UNITED STATES DEPARTMENT OF AGRICULTURE
FOREST SERVICE

(From the Forest Service, United States Department of Agriculture
San Francisco Office)

TIMBER CRUISED ON
CALIFORNIA FORESTS

The U. S. Forest Service reports that the work of cruising and mapping the national forests in California has just closed for the season. During the summer three parties of from five to eight men each covered 178,706 acres and made a careful appraisal of timber amounting to a little over two and one-half billion feet.

Work was concentrated upon bodies of timber for which applications to purchase are expected by the Forest Service in the near future. The appraisal of the Last Chance watershed on the Plumas National Forest was completed; in the Sierra Forest an area of 41,590 acres on Patterson Mountain was mapped; and on the California National Forest two bodies of timber, one on Grindstone Creek and the other east of Hull Mountain, were covered.

In addition to these, a party of two men made a reconnaissance examination of the Lower Klamath country on the Klamath National Forest, which extends from Happy Camp down the river to the west boundary of the Forest below Orleans. This area includes 501,018 acres with a stand of merchantable timber estimated at 3,900,000,000 feet. Special interest has attached to this timber in connection with a proposition to run a railroad down the Klamath River to the Coast which has been under discussion.

(From the Forest Service, United States Department of Agricultu
San Francisco Office)

DEVELOPING WATER
ON GRAZING LANDS

How range which ordinarily can not be grazed because of inadequate water facilities can be opened up for stock, is told by the Department of Agriculture in Farmers' Bulletin 592 on the development and improvement of stock watering places upon National Forests.

No stock range can be said to be properly utilized, the department avers, if there is an uneven distribution of water. On some areas the water supply is not sufficient for the number of stock the forage will support. On others the water supply is sufficient, but it is not permanent; making it necessary to remove the animals before the season is over. Still other areas are made practically worthless for stock purposes by the absence of water except at rare intervals during winter.

Range cattle need from 8 to 10 gallons of water a day, says thedepartment, and sheep from one-half to two gallons, unless there is heavy dew and an abundance of succulent feed. No matter how good the forage on a given area may be, animals must have all the water they need or they will not thrive. Cattle, moreover, should not be required to travel on an average more than two miles to reach water, if they are to be in marketable condition in the fall.

The flow ~~nx~~ from ordinary springs, and even from seeps, can be increased by digging them out and curbing the sides with cement, the water being carried in pipes to conveniently situated troughs. Swampy spots can often be made to furnish a water supply by cutting an open channel from some spring in the middle of them, perhaps cutting other channels across the main one, and drawing the spring and surface water to some storage point outside. Streams flowing through deep canyons cam be made accessible to stock by constructing trails over which the animals can reach them, or by raising the water to the surface of the canyon by mechanical means.

When a natural water supply is some distance from the range, small dirt flood-water reservoirs can be constructed almost anywhere to supplement the natural supply. If a low place with a heavy adobe or clay soil is selected in the middle of some open park with sloping hills about it, comparatively little work with plow and scraper will construct a reservoir which, when trampled and puddled by use, will hold enough water for many head of stock for some time. Furrows running diagonally across the slopes will collect the rainfall or melting snow water and carry them directly to the reservoir for storage. Artificial reservoirs permit the stock to be scattered out over a larger area than ordinarily, and remove the need for them to concentrate at permanent watering-places.

Where the natural water supply is more than 50 feet below the surface of the ground the best way to reach it, says the

department, is by drilling or boring a well and raising the water by means of a windmill or pump. A deep well of from 150 to 300 feet, such as is common in the Texas Panhandle region, complete with windmill, truck, troughs, etc., represents an investment of about $1,000, and should easily supply between 350 and 500 cattle daily. No well is complete, claims the department, without a reservoir with a capacity large enough to carry the stock dependent upon it over a long calm spell. The cost of a reservoir holding approximately 200,000 gallons of water should not exceed $100.

The best kind of trough for holding water derived from wells and springs, thinks the department, is the ordinary metal one used by stockmen. It is light in weight, will last a long time, and costs little. However, where the materials are readily available and the cost of cement is not prohibitive, the department recommends concrete as better than any other trough material

Work has been done on the national forests to improve the water facilities on the range lands. In all, a total of 676 separate water improvements projects have been developed, 329 by the users of the range themselves, 172 through cooperation between the Forest Service and the users, and 175 by the service alone. Of these 676 improvements, 378 are springs or seeps, 286 are reservoirs or tanks, while the rest are wells, trails, and the like.

# # # #

Because of drouth conditions there is considerable fire danger in the forests of the east this fall.

Pennsylvania and New Jersey lead all other states in the quantity of wood used for making tobacco pipes, and utilize apple wood, French brier, ebony, birch, red gum, and olive wood.

Cherry is the wood most used as a backing for the metal plates from which illustrations are printed in magazines and periodicals. It is chosen above all others because it holds its shape, does not warp or twist, works smoothly and does not split.

Two governors, those of Oregon and Massachusetts, have suspended the hunting season this year because of increased danger of forest fires when the woods were exceptionally dry.

The position of city forester is now offering a new field for men with a technical training in forestry. Fitchburg, Massachusetts, is one of the latest towns to secure an official of this sort.

Because of extreme drouth, the fire risks on the national forests in the Northwest have been greater this season than in any other since 1910, the worst year since the forests were created. Much less damage was done this year because experience in fire fighting was gained in the fires of 1910.

# # #

11/7/14

FOREST NOTES

UNITED STATES DEPARTMENT OF AGRICULTURE

FOREST SERVICE

Although there were an unusual number of forest fires on the national forests of Oregon and Washington this year, the loss of merchantable timber has been relatively small.

The propellers of aeroplanes such as are used in the present European war may be made of selected ash, which is both strong and light and will not split under vibration or shock, or of built-up layers of spruce with mahogany centers. The framework of the machines, too, is generally made of wood, spruce being much used on account of its straight grain and freedom from hidden defects.

A surprisingly large number of substances, ranging all the way from the condensed fumes of smelters to the skimmed milk of creameries, have been tried or suggested as means of preserving wood from decay. Most of them, however, have been found to have little or no value for the purpose. Certain forms of coal-tar creosote and zinc chloride are the most widely used wood preservatives.

It is said that the German invaders of Belgium, whatever else they may have destroyed, have been careful not to injure park trees. The cavalrymen, so a report goes, are forbidden to tie their horses to trees for fear that the animals will gnaw the bark. Germany was the first nation to apply forestry on a large scale, some of the crown forests having been under scientific management for over a hundred years.

# # #

FOREST NOTES 11/12/14

The town forest of Baden-Baden, Germany, yields an annual profit of $5.25 per acre, or a total net profit of nearly $27,500.

Outside of its use for fence posts, black locust finds its principal utilization in insulator pins and brackets for telegraph and telephone lines.

One hundred shade trees will be planted by the Massachusetts forestry association in cities or towns of four population classes which win prize contests for excellence in street tree planting.

The Russian government has placed an embargo on all kinds of lumber, to prevent its exportation; walnut lumber, including Circassian walnut, much prized by American furniture makers, is specifically mentioned.

Experiences with forest fires on the national forests this year show that automobiles, where they can be used, furnish the quickest and cheapest transportation for crews of fire fighters. Motor rates are higher than those for teams for the actual time employed, but the total cost per distance traveled and in wages paid to men in getting to fires is much less. The time-saving is self-evident; trips which ordinarily require two days time by team have been made by automobile in a few hours.

# # #

UNITED STATES DEPARTMENT OF AGRICULTURE
FOREST SERVICE
WASHINGTON

(From the Forest Service, United States Department of Agriculture, San Francisco Office)

FOREST BADGES

FOR BOY SCOUTS

United States District Forester Coert DuBois has just received from the maker a supply of badges which are to be given to the Boy Scouts who qualify next summer as National Forest Aides. To become eligible to receive a badge, the Scout is required to spend at least ten days on a National Forest performing useful service during the fire season under the direction of federal forest officers. At the end of this period he has to pass an examination in elementary forestry.

The first Scout to receive the badge was a Mill Valley boy who worked on the Tahoe Forest last summer under Forest Supervisor R. L. P. Bigelow. He performed with credit the duties assigned to him, being specially complimented by Bigelow for his conduct at the Crystal Peak fire, and passed the examination with a fair rating.

The badge is of bronze, with the Forest Service pine tree in relief encircled by the words "National Forest Aide". The District Forester expects that a number of them will be earned by the Boy Scouts next season.

L-1

(From the Forest Service, United States Department of Agriculture
San Francisco Office)

NEW SPECIFICATIONS

FOR HICKORY HANDLES

Through new specifications for ax, sledge, adz, pick and other hickory handles, the Panama canal authorities recently purchased large quantities of this class of material for one-fourth less than formerly paid, and at the same time are getting serviceable stock.

The war department and the navy department, as well as the Panama canal commission, have adopted these specifications which were prepared by the forest service, primarily for the use of the various branches of the federal government. Subsequently, however, they have been approved by the trade, both manufacturers and dealers, and adopted by several of the leading railroads.

The new rules are the result of a long study of the subject, covering exhaustive strength tests, investigations of the growth of hickory in the woods, processes of manufacture and market conditions. Under the new specifications handles are selected according to weight, as influenced by the density of the wood, and they now include material which may be either partly or wholly of heartwood, known generally as red hickory. Red hickory was formerly discriminated against in commercial grading, but it is now accepted, since it has been found that weight for weight it is just as serviceable as the white hickory. Handles which contain small sound knots or bird pecks, so located as not to affect the strength, are also accepted.

165-F

(From the Forest Service, United States Department of Agriculture
San Francisco Office)

DISEASE ATTACKS

MOUNTAIN SHEEP

AND GOATS

The department of agriculture has undertaken the investigation of a serious disease which is affecting the Rocky Mountain bighorn sheep and the mountain goats, and is reported as existing on the Lemhi national forest in Idaho.

The forest officers think that it is the same disease that caused the mountain sheep to die in great numbers during 1882-3. The nature of the disease is not known, though it results fatally and sheep affected with it seem to have rough and mangy coats and are very much emaciated. Three bureaus of the department are engaged in the study -- the biological survey, bureau of plant industry, and the forest service. A competent veterinarian has already gone to Idaho to start the work.

# # #

UNITED STATES DEPARTMENT OF AGRICULTURE
FOREST SERVICE

FOREST NOTES 11/20/14

Forbach, Germany, is said to have the most profitable town forest known; it yields an annual net gain of $12.14 an acre.

The state school of forestry at Bottineau, North Dakota, announces that it will have one million trees for distribution to the citizens of the state during 1915.

Apple wood, used almost exclusively for saw handles, also furnishes the material for many so-called brier-wood pipes and particularly for the large wooden type used in printing signs and posters.

One of the most expensive woods used regularly in an established industry in the United States is boxwood, the favorite material for wood engraving. It has been quoted at four cents a cubic inch, and about $1,300 by the thousand board feet.

What is supposed to be record speed in getting men to a forest fire is reported from Oregon, where on one of the national forests, a ranger went to town, hired ten men, and got this force to the fire twelve miles away within 48 minutes after he was notified by telephone.

# # #

UNITED STATES DEPARTMENT OF AGRICULTURE
FOREST SERVICE

FOREST NOTES 11/26/14

A great deal of the oak used on the Pacific coast comes from the eastern part of Asia.

To guard against tree repair fakers, or quack tree surgeons, the Massachusetts forestry association will inspect the shade trees belonging to its members, free of charge.

The Sihlwald, or city forest of Zurich, Switzerland, adds to the town's revenues $7.20 per acre a year, reducing the amount needed to be raised through taxation by more than $32,000.

In northern Idaho and Montana, which had many fires during the past summer, 35 per cent of the fires on national forests were caused by railroads, 26 per cent by lightning, and 10 per cent by campers. The remainder were due to brush burning and other miscellaneous or unknown causes.

A mountain lion recently killed in the Grand Canyon game preserve, which adjoins the Tusayan national forest, measured ten feet from nose to tail. Mountain lions and other beasts of prey, such as wolves, coyotes, and wild cats, are killed by forest officers and game wardens because they are a menace to stock and to game animals.

# # #

UNITED STATES DEPARTMENT OF AGRICULTURE
FOREST SERVICE

(From the Forest Service, United States Department of Agriculture
San Francisco Office)

PREVENT GREAT DAMAGE

FROM FOREST FIRES

According to reports received by District Forester Coert DuBois from all the national forests in California, the damage from forest fires in this state during the past season was held to $76,524. The records show that out of 1,234 fires, 1024 were put out before they had reached 10 acres in size, and 662 were extinguished before they had burned an area 100 feet square. Considering the fact that the national forests contain resources in timber alone which are worth more than $200,000,000 and that these resources were endangered by no less than 1234 fires, forest officers are congratulating themselves that the damage was comparatively slight.

In many cases fires were prevented from destroying valuable timber or improvements only by the most desperate resistance. The fire that occurred at the base of Mount Shasta in late July and threatened not only the national forest but the towns near its border is an example of enormous damage averted by hard work. The protection of thousands of dollars worth of private property necessitated the building of back-fires which threatened to over-run the government timber. To control these back-fires, more men were required than had ever before been mobilized by the Forest Service in California, and the expense to the Government was considerable. The fight was successful, however, and damage was almost entirely averted.

The greatest loss that has been reported from any single fire occurred on the lands of a lumber company in the Middle Sierras. A spark from one of the company's engines caused a fire that destroyed timber and equipment belonging to the company valued at $60,000 and injured the adjacent national forest to the extent of $7,000 before it was controlled.

# # #

White pine and yellow pine are the woods most used for boxes, and each contributes more than a billion feet to the box industry annually.

The annual cut of British Columbia timber is approximately 2 billion feet. There are 420 mills and 790 logging camps in the province, employing about 60,000 men.

The Massachusetts forestry association offers as a prize the planting of fifty acres of white pine, to the town which gains first place in a contest for town forests.

The Boise national forest in Idaho had 30 fires during the past summer, yet 28 were held down to less than 10 acres, and of these 15 were less than one-quarter of an acre. The supervisor says this success was due to a lookout tower, and to efficient telephone and heliograph service.

Because of the war, English manufacturers and consumers of wood pulp have been caused considerable uneasiness. Production is at a standstill in the countries at war, and in Norway and Sweden, principal sources of supply, mills have been greatly hampered because of a lack of coal and of chemicals. England has practically no domestic sources of pulp.

# # #

12/5/14

FOREST NOTES

The timber industry represents 37 per cent of the annual production of wealth in British Columbia.

Boxmakers in the United States use more than four and a half billion board feet of lumber each year or more than one-tenth of the entire lumber cut of the country.

Of two million sheep annually grazed in the state of Utah, more than a million are on the national forests, or, including lambs which are fattening for market on the forest ranges, over a million and three-quarters.

In addition to his own fire detection system, the supervisor of the Palisade national forest, Idaho, was notified of each fire by from five to ten different local settlers, who thus showed their cooperation in working for fire suppression.

The Uinta mountains of Utah, included within the Wasatch, Uinta, and Ashley national forests, should become a favorite recreation region, because of the many small lakes within depressions scooped out by glacial drifts. Seventy such lakes can be counted from Reid's peak, and one particular township, 36 miles square, contains more than a hundred.

# # #

UNITED STATES DEPARTMENT OF AGRICULTURE
FOREST SERVICE
WASHINGTON

FOREST NOTES 12/10/14

Only 7½ per cent of last season's 400 fires in national forests of Utah, southern Idaho, western Wyoming, and Nevada caused losses in excess of $100.

Virginia uses more wood for boxes and crates than any other state, followed by New York, Illinois, Massachusetts, and California, in the order named.

Those familiar with the eastern mistletoe only have no idea of the great losses due to this parasite in the forests of the west, where it counts next to fire and insects in the amount of damage done.

In parts of the west where trees are scarce, sage brush is used for fuel. In Nevada the large main stems are trimmed by Indians at $3.00 a cord and delivered to the user at about $6.50. Sage brush burns rapidly and is rather dirty, but produces good heat.

A log raft containing one million feet of cedar, said to be the largest ever floated on the Pacific, recently made the trip from British Columbia to Puget Sound. It was 100 feet long and 70 feet wide; it stood 15 feet out of the water and 20 feet under.

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UNITED STATES DEPARTMENT OF AGRICULTURE
FOREST SERVICE
WASHINGTON

(From the Forest Service, United States Department of Agriculture, San Francisco Office)

FOREST PROTECTION

SAVES $3,000,000

The forest fires that occurred in California last summer directly threatened to destroy Government resources worth more than $3,000,000, according to the official report of United States District Forester Coert DuBois. The forest rangers, however, succeeded in preventing most of the loss, so that the actual damage sustained by the Gocernment will not exceed $90,000.

The fire season in California is said to have been the worst in the history of the Forest Service, 1468 fires occurring as against a normal average for this district of 798. Conditions of wind and temperature were at times extremely favorable to the spread of fires, and only the utmost promptness and energy on the part of the rangers prevented more of them from developing into serious conflagrations. A total area of 53,763 acres was burned, of which 44,463 acres were brush.

The worst previous season is said to have been that of 1910 in which 553 fires occurred in California. Owing largely to the undeveloped condition of most of the National Forests at that time, only 227 fires could be attacked promptly enough to prevent them from getting beyond control; while the 326 that got away caused a loss of a little over $500,000. The Government's protection system is described as having greatly improved since 1910. Telephone lines have been extended, lookout points equipped and manned, and the forest firemen have been stationed at more advantageous points. The result has been that last season 1200 fires were put out in their early stages -- nearly a thousand more than in 1910 -- and the 268 that got away were fought out before they had burned an area of a half-mile square.

The conditions surrounding every fire that started were studied by forest officers, and the amount of damage directly threatened by each was computed. On the basis of these reports, the District Forester has calculated the loss averted at $3,013,000. This figure is believed to be conservative. It is corroborated to some extent by a comparison with 1910 when a little more than one-third as many fires caused an actual loss of $500,000.

Tenderfeet were responsible for most of the preventable fires, having caused 340. The Southern California forests suffered particularly from this form of carelessness.

On seven forests in Northern California incendiarism was prevalent, causing 212 fires.

The Government paid out $115,820 during the season for fire-fighting in California.

# # #

(From the Forest Service, United States Department of Agriculture
San Francisco Office)

FOREST EXHIBITS 168-F (12 G)

FOR CALIFORNIA

Part of the governemnt's exhibit for the Panama California exposition at San Diego leaves Washington this week. This portion has to do with the national forests in New Mexico, and will be shown in the New Mexico building, the exhibit having been prepared in cooperation with the state board of exposition commissioners of that state. The material also shows specimens of the principal timber trees of New Mexico and their uses.

Other exposition material is to leave soon for San Francisco, where it will form a part of the Panama-Pacific exposition. Part of this is being prepared through cooperation between the Forest Service and the United States civil service commission. The commission passes on the qualifications of all candidates for positions in the forest service, testing the fitness of those who wish to become forest officers through outdoor examinations in riding, surveying, timber estimating, and similar matters as well as my more conventional methods; its exhibit will illustrate the duties of these officers.

Cooperation also exists, in the preparation of exhibit material, between the forest service and the bureau of education. This shows how forest subjects are used in public schools, in connection with nature study, commercial geography, agriculture, and the like. One of the exhibits is a display made by the normal school pupils of the District of Columbia, in which a number of those who are studying for teachers' positions entered a prize contest on tree study. Each of the contestants prepared a separate exhibit showing the life history and the products of individual trees, such as white pine, hickory, or suger maple.

# # #

FOREST NOTES 12/23/14

Only one modern sawmill is operated in the territory of Hawaii.

In district 4 of the forest service, with headquarters at Ogden, Utah, lightning caused 36 per cent of this year's fires and campers 27 per cent.

As showing the possibilities for tree growth in regions where irrigation has to be depended upon, it is pointed out that Boise, Idaho, has as many as 94 different kinds of ornamental and shade trees.

The Laurentide company of Quebec, producers of pulp and pulpwood, is reforesting its non-agricultural out-over lands. It is also importing reindeer from Newfoundland, to see if they can take the place of dogs in winter woods work.

A small railroad operating an oil-burning locomotive on the Tahoe national forest, California, had a breakdown during the past summer and burned wood instead of oil for one day. On this day fifteen fires started along the right of way. During the preceding year, only one fire occurred near the railroad and it was not thought that the engine was responsible for that one.

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UNITED STATES DEPARTMENT OF AGRICULTURE
FOREST SERVICE
WASHINGTON

12/30/14

FOREST NOTES

Forest fires in British Columbia covered more than 300,000 acres during the past year.

It is reported that there is a big market in Hawaii for box shooks for packing canned pineapple and pineapple juice.

During the past two years forest officers have killed nearly 9,000 predatory animals, more than three-fourths of which were coyotes.

The aboretum established at Washington in Rock Creek Park, through cooperation between the forest service and the District of Columbia, now contains 1,200 trees, comprising 92 different species.

There were 400 fires this year on the national forests of Utah, southern Idaho, western Wyoming, and Nevada, or 15 more than in the most disastrous season of 1910. Yet the cost of extinguishing them was only one-third and the damage only one-thirtieth of that of the earlier year. The difference is due to better organization now, and to more roads, trails, and telephones.

# # #

UNITED STATES DEPARTMENT OF AGRICULTURE
FOREST SERVICE
WASHINGTON

(From the Forest Service, U. S. Department of Agriculture, San Francisco Office)

LIVE STOCK ON NATIONAL FORESTS

N-1

Authorization has been secured from the Secretary of Agriculture to graze on the National Forests of California, for the season of 1915, 212,280 cattle and horses, 505,750 sheep and goats, and 7,950 swine. Compared with the grazing season of 1914, these numbers constitute a net increase of 3,530 cattle and horses, 460 sheep and goats, and 325 swine. During the year approximately 835,000 acres, which supported 5,700 cattle and horses, 18,300 sheep and goats, and 1,000 swine under National Forest permit, were eliminated from the Forests. This, considered in connection with the above authorization for 1915, makes a favorable showing in carrying capacity, since it means an increase of 11,230 cattle and horses, 18,760 sheep and goats, and 1,325 swine on the areas retained.

The National Forests are accomodating more live stock each year as better methods of handling are brought about and new and unutilized areas are brought into use through trail construction, water development, and other means.

# # # #

FOREST NOTES 1/8/15

Lodgepole pine, one of the principal trees of the Rocky Mountains, makes good strong wrapping paper and pulp board.

Osage orange wood is a source of dye and can be used to supplement the imported fustic wood, as a permanent yellow for textiles.

News print paper has been made by the forest service laboratory from 24 different woods, and a number compare favorably with standard spruce pulp paper.

The forest service is cooperating with 54 railroads, mining companies, pole companies, and cities in making tests of wooden ties, timbers, poles, piling, and paving blocks which have been given preservative treatments.

Recent sales by the government totaling 126,000,000 feet of sawtimber in the Olympic national forest, in western Washington, mark the opening of this hitherto inaccessible storehouse of timber, estimated to contain a stand of 33 billion board feet.

# #

UNITED STATES DEPARTMENT OF AGRICULTURE
FOREST SERVICE
WASHINGTON

FOREST NOTES 2/1/15

It is estimated that the government's Grand Canyon game refuge, in Arizona, now contains about ten thousand deer.

More than nine million young trees and ten thousand pounds of seed were planted on the national forests in 1914.

The government built more than two thousand miles of trail and three thousand miles of telephone line on the national forests in 1914.

At least 25 per cent of the larch timber over large areas in eastern Oregon has been killed or weakened by mistletoe, and the forest service is taking steps to combat the pest.

Success has followed forest planting on the sandhills of Nebraska. Jack pines planted there by the government forest service ten years ago now have a height of over 15 feet and a diameter of 4 inches.

Increasing use of the national forests by local farmers and settlers to supply their needs for timber is shown in the fact that small timber sales on the forests numbered 8,298 in 1914, against 6,182 the previous year.

# # #

(From the Forest Service, U. S. Department of Agriculture, San Francisco Office)

175-F

NATIONAL FORESTS

MUCH USED

Selling some billion-and-a-half board feet of timber and supervising the cutting on several thousand different areas, overseeing the grazing of more than 1,500,000 cattle and 7,500,000 sheep, and building more than 600 miles of road, 2000 miles of trail, 3000 miles of telephone line and 700 miles of fire line are some of the things which the government forest service did last year, as disclosed in the report by the chief forester for 1914. These activities were all on the national forests, which at present total about 185,000,000 acres.

There is need, says the chief forester, to increase the cut of timber from the national forests wherever a fair price can be obtained for the stumpage, because a great deal of it is mature and ought to be taken out to make room for young growth. Unfavorable conditions in the lumber trade caused new sales of national forest timber to fall off somewhat during the past year, though the operations on outstanding sales contracts brought the total cut above that of the previous year by 130,000,000 board feet. There was, however, a big increase in small timber sales; these numbering 8,298 in 1914 as against 6,182 the previous year. Desirable blocks of national forest timber have been appraised and put on the market and it is expected that these will find purchasers when conditions in the lumber industry improve. All told, the government received $1,304,053.66 from the sale of timber on the forests in 1914. The receipts from all sources totaled $2,437,710.21.

After eight years of experience, stockmen are well satisfied, says the chief forester, with the way the grazing of livestock on the forests is regulated, and have even urged upon congress the application of the same method of control to the unreserved public range. Almost 29,000 permittees graze stock on the national forests, and these paid to the government in the fiscal year 1914 fees amounting to over a million dollars. The present tendency to raise fewer sheep and goats and more cattle and horses is shown in the fact that the number of cattle and horses permittees on the western forests increased last year by 1,579, while the number of sheep and goat permittees fell off by a total of 268. The western stock business, the forester points out, is becoming attached to the soil, and the itinerant sheep grower and the speculator in cattle are giving place to the permanent resident and owner of improved ranch property. The latter is always given preference in the use of national forest range.

Some $400,000 was spent by the forest service during the year for permanent improvements on the national forests to make them accessible and to insure their protection from fire. These improvements include 270 miles of new road, 2,153 miles of trail, 3063 miles of telephone line, 775 miles of fire line, and 106 structures, besides bridges, corrals, fences, and cabins. In addition, 642 miles of road were built for the public by the use of 10 per cent of the national forest receipts, as authorized by congress.

Under another law, 25 per cent of the national forest receipts for the year, - amounting to $586,593.39, - were paid over to the various states in which the forests lie, for the benefit of county schools and roads.

Since 1909, when systematic classification of national forest lands was begun, more than 10,000,000 xxx acres have been eliminated. Scattered interior tracts which it is not practical to eliminate are opened to settlement through listing, which allows them to be taken up under the forest homestead law. Anyone may apply to have land within a forest examined to determine whether it is best suited for agriculture, and if found so it is opened to settlement under this law. During the year 2,690 tracts, totaling 282,483 acres, applied for by individuals were opened for entry. By elimination and listing, the percentage of unpatented agricultural land within the national forests, never large, has been reduced to a very small amount.

# # # #

(From the Forest Service, U. S. Department of Agriculture, San Francisco Office)

NATIONAL FOREST FIRES CAUSED
LOSS OF $677,816 IN 1914 174-F

Washington ----: Fire on the national forests of the west in 1914 caused a loss to the government of not quite 340,000,000 board feet of merchantable timber, valued at $307,303, and of reproduction(or young growth of trees) valued at $192,408, according to statistice just compiled by the forest service. There were 6605 fires,of which only 1545 burned over an area of 10 acres or more. About 77 per cent of all the fires did damage of less than $100 each. In addition to the losses suffered by the government,timber on state and private lands within the forests,totaling 228,008,000 board feet and valued at $175,302 was lost. The total area burned over was 690,240 acres, of which 310,585 acres were state and private lands.

Notwithstanding that it was an exceptionally bad year for fires,on account of high temperatures,heavy winds,and prolonged drought,the average loss per fire was $103 against $131 in 1911,when there were only about half as many fires. Eighty-five per cent of the total loss was caused by fires in Idaho,Montana,Oregon,and Washington,where more than half the timber in all the national forests stands. Less than one-tenth of one per cent of this timber was affected. Of the 6605 fires reported, 3691 - or 55.9 per cent - occurred in those states; and of the 99 fires causing losses of more than $1,000 each, 81 were in that region. Lightning was the chief cause, starting 2,032 fires; campers came next with 1,126 fires.

# # #

(From the Forest Service, U. S. Department of Agriculture, San Francisco Office)

COYOTES SPREAD HYDROPHOBIA

171-F

Hundreds of Cattle Bitten by Rabid Wild Animals

Washington ....: The spreading of rabies by infected coyotes among cattle grazing in the national forests has assumed a grave aspect, according to a report received by the Forest Service from the district forester in charge of the forests in Washington and Oregon. Numerous townships in eastern Oregon, it is reported, have ordered that all dogs be muzzled lest those that have been bitten by rabid coyotes develop hydrophobia and attack humans or domestic animals.

Efforts are being made by the state authorities of Oregon to stop the spread of hydrophobia by this means, and officers of the Forest Service are cooperating in attempts to kill off the coyotes. In one county alone a loss of three hundred head of cattle is charged to rabid coyotes.

# # # #

(From the Forest Service, U. S. Department of Agriculture
San Francisco Office)

BRAZIL TO TRY
AMERICAN MATCH WOOD Q-2

Supply of Russian Aspen Stopped by War
Samples of Substitutes Being Arranged by Forest Service

Washington - - - : American manufacturers of match wood may find market for their product in Brazil, if a sample shipment now being arranged by the U. S. Forest Service proves suitable to the Brazilian match manufacturers whose ordinary supply of Russian aspen has been cut off by the European war. As it is regarded as an excellent opportunity for the introduction of North American forest products into South America, the Forest Service is trying to enlist the cooperation of private lumber concerns who are reaching out for export business.

The Brazilian match factories, according to a cablegram from a traveling agent of the Department of Commerce, have been using annually about 7,000,000 feet of Russian aspen and have been forced by the war to seek a substitute, On the agent's recommendation of American match woods, a request was made to the Forest Service for samples of western white pine, sugar pine, cottonwood, and basswood, eight bolts of each, 7 feet 3 inches long and 12 to 20 inches in diameter.

The National Forests contain large supplies of both sugar and western white pine suitable for the manufacture of

matches and used for this purpose in the United States. It has been difficult, however, to make up samples of these woods for the reason that the Forest Service has no funds which can be used to pay railroad transportation charges from the west to New York or to prepay ocean freight as required by the steamship companies. The necessity to transport the samples across the continent, instead of sending them direct to Rio Janeiro from San Francisco or Portland is due to present shipping conditions on the west coast.

That the Brazilian manufacturers have agreed to pay freight and customs charges, however, has encouraged a Memphis concern to promise to furnish cottonwood samples. The Forest Service is trying to get into touch with other firms which could furnish the pine and basswood.

# # #

1915

(From the Forest Service, U. S. Department of Agriculture, San Francisco Office)

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172-F

DANGEROUS FIRE

SEASON FORESEEN

Two National Forest Blazes in January and Snow is Reported Below Normal

Washington -----: The possibility of a dangerous spring and summer fire season in the national forests in the west is presaged by reports that two forest fires occurred in January and that the snowfall in much of the Rocky Mountain region and in the foothills has been much below normal. January fires are almost unheard of in the national forests, and the snow reports are regarded as especially significant as they indicate that unless the deficiency is made up the forests will be dry earlier in the spring than usual, with a consequent increase of the fire menace.

The fires occurred in the Pike Forest, in Colorado, and the Black Hills Forest, in South Dakota; the latter believed to have been of incendiary origin, according to the District Forester at Denver. About 75 acres was burned over, all told. They were the only national forest fires reported for January.

The District Forester at Ogden, Utah, in charge of the national forests in Nevada, Utah, and southern Idaho, reported that the snow in this region also is far below normal.

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(From the Forest Service, U. S. Department of Agriculture, San Francisco Office)

PRIZES FOR FOREST FIREMEN Q-1

The prizes offered by the U. S. District Forester for particularly meritorious work in fighting forest fires during last fire season have been awarded to Clarence M. Reeve of the Klamath National Forest, Milton D. Morris of the Eldorado, and Ernest E. Duncan of the Trinity.

Guard Reeve was notified by District Ranger Phillips of a serious fire on the mountainside eight miles from his station. He saddled up and arrived at the fire, properly equipped, in time to prevent it from spreading, having covered the distance in one hour and twelve minutes. He watched the fire all night, and in the early morning was informed that men were needed to fight a fire on Walker Creek. He rode all day to reach this fire, arriving in time to assist in corraling it. The next day and a half he spent felling the burning snags and making the fire safe; and then returned to his station, having spent four days doing efficient work with practically no rest.

Guard Morris was notified after dark that a fire had started five miles from his station. He was ready in one and one-half minutes, and arrived at the fire over a very rough trail in one hour and fifteen minutes.

Guard Duncan with one assistant rode 18 miles and extinguished two fires in one day, the fires being widely separated and in exceptionally difficult country.

The prizes are in the form of framed certificates, each bearing the name of the winner.

From the Forest Service, U. S. Department of Agriculture,
San Francisco Office)

F-176

TO CONFER ON WORK OF WORK OF FOREST SERVICE

Specialists Will Discuss Lumber Investigations and Experiments at Madison, Wisconsin, April 14 to 17

Washington ---- : The nation-wide study of the lumber industry, which is being made jointly by the Department of Agriculture and the Department of Commerce, and the other industrial and technical investigations and experiments which have been carried on by the Forest Service in the last two years, will be discussed at a conference of Forest Service officials at Madison, Wisconsin, on April 14 to 17.

The Forest Service Laboratory, the Washington Office of Industrial Investigations, and each of the seven National Forest Districts will be represented at the conference by specialists. Among the subjects for discussion are: Cooperation of the Forest Service with industries, lumber distribution in the United States, utilization of low-grade lumber and mill waste, adaptation of manufacturing and grading to specific classes of consumers, unification and standardization of lumber grades, study and development of general markets for National Forest timber, mill-scale studies, including technical methods, tallying, etc., lumber depreciation, and the collection and compilation of lumber price data.

The information already collected by the Forest Service under some of these headings includes the most exhaustive data on the mechanical products of wood ever collected by any agency in the world, and already has resulted in practical reforms and big savings to several of the important wood-using industries.

# # #

(From the Forest Service, U. S. Department of Agriculture
San Francisco Office)

FOREST RANGERS INSURE
THEIR HORSES Q-5

The forest rangers in California have formed a mutual horse insurance association for the purpose of distributing the loss that occurs when their saddle or pack animals are killed or disabled. When horses hired by the government for packing supplies to fire-fighters or for other purposes are injured theirxowners are reimbursed, but rangers are supposed to provide their own mounts and as the government does not compensate them for losses the rangers have pooled their interests.

The scheme was given a trial last season with 177 rangers in the association. Two claims were paid. Other losses occurred, but the losers were not members of the association. This season it is expected that most of the 900 rangers who constitute the summer patrol force in California will be members.

# # # #

1915

(From the Forest Service, U.S.Department of Agriculture, San Francisco Office)

F-177

MEAT PRODUCTION ON NATIONAL FORESTS INCREASES

Secretary of Agriculture Allots Range for Nearly Two Million Cattle and Nine Million Sheep

Washington . . . : Receipts from grazing permits on the National Forests for the season of 1915 will contribute to the public revenues approximately $1,200,000, or about $200,000 more than last year, according to an estimate made from the allowances just authorized by the Secretary of Agriculture. The Forests this year will furnish forage for 1,983,775 cattle and horses, 8,747,035 sheep and goats, and 64,040 swine; the figures indicating a material increase of meat production on the government-regulated ranges.

The increase of 92,656 cattle and horses over the allowances for 1914 is ~~xxxxxxxxxxx~~ accompanied by a decrease of 120,881 sheep and goats, showing that in many parts of the West sheep are giving way to cattle. It is thought that the recent high price of beef has been encouraging many farmers and former sheepmen to go into the cattle business, though it will be the first time in the last five years that the allowance of sheep has not increased over that of the previous season. There are localities, however, where the demand for sheep range is far in excess of the supply.

The grazing charges are slightly higher this year. In the West the rates have been fixed at 48 to 90 cents per head per year for cattle and horses, and 12 to 18 cents for sheep and goats; in the East the rates are from 85 cents to $1.50 for cattle, $1.10 to $3.00 for horses, and 25 to 40 cents for sheep and goats. Pigs pay from 29 to 43 cents in the west and 50 to 90 cents in the East.

The grazing allowances indicate the relative importance of the stock business in the various parts of the West in which the National Forests are situated. The Forests in District 2, which embraces Colorado, Wyoming, South Dakota, Nebraska, western Kansas, northern Michigan, and northern Minnesota, are allowed the largest number of cattle, 522,550 head, and next to the largest number of sheep, 1,397,500 head; District 4, comprising Utah, southern Idaho, western Wyoming, eastern and central Nevada, and northern Arizona, the second largest number of cattle, 431,150, and the largest number of sheep, 3,335,860; District 1, comprising Montana, northeastern Washington, northern Idaho, northwestern South Dakota, and southwestern North Dakota, 193,510 head of cattle and 1,304,500 head of sheep; District 3, comprising Arizona and New Mexico, 418,900 cattle and 905,800 sheep; District 5, embracing California and southwestern Nevada, 212,280 cattle and 508,050 sheep; District 6, comprising Washington, Oregon, and Alaska, 159,250 cattle

and 1,280,500 sheep; District 7, which includes Arkansas, Florida, Oklahoma, and the states in New England and the southern Appalachian region, where forest reservations have been purchased by the government, 46,135 cattle and 14,850 sheep.

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(From the Forest Service, U. S. Department of Agriculture, San Francisco Office)

LAND ELIMINATED FROM F-180

SIERRA NATIONAL FOREST

On April 27 the President signed a Proclamation eliminating approximately 77,440 acres of land from the Sierra National Forest, California. This action results from recommendations made by the Secretary of Agriculture, based on examinations and reports submitted by the Forest Service. The lands elminiated are situated along the western boundary of the National Forest in what is locally known as the Sierra Foot Hills region. The greater portion of the land excluded has been found upon examination in connection with the general land classification of this Forest to be mainly agricultural and grazing in character. A great portion of the land has already been acquired by private parties, either under the general land laws prior to the inclusion of the land within the National Forest or under the Forest Homestead Act of June 11, 1906. In view of the heavy percentage of alienation and the agricultural character of the land generally, it was felt that the remaining areas of Government lands excluded, from the National Forest should be eliminated therefrom in order that they might be acquired and used in connection with the surrounding agricultural lands already appropriated.

# # #

(From the Forest Service, U. S. Department of Agriculture, San Francisco Office)

F-179

UNITED STATES CONDUCTS

WOOD-WASTE EXCHANGE

Manufacturers Decrease Costs and Increast Profits by Utilizing Each Other's Scrap Material

Washington ----: The latest business -aid service instituted by the Government is a wood-waste exchange. It enables lumbermen and manufacturers in the various wood-using industries to utilize each other's waste to mutual advantage, aiming to effect a large saving in forest material as well as in money.

The wood-waste exchange is being conducted by the forest service of the department of agriculture. More than forty manufacturers of wooden articles have already asked to be listed as having certain kinds of waste wood for sale, or as desiring to obtain their raw material in the rough or in semi-finished form from mill or factory waste.

Twice a month the exchange sends out a circular headed "Opportunities to Buy Waste", containing the names and addresses of factories having waste wood for sale, with exact information as to species, sizes, forms and quantities. Similarly, another circular headed "Opportunities to Sell Waste" gives the specific requirements of wood-using plants which desire to buy waste material.

One of the first waste problems solved has been that

of a furniture-maker in Michigan who wrote to the Forest Service asking how to dispose of sugar maple blocks and sticks which were cut off in the process of furniture making and which he had to sell merely as fuel. Samples were obtained from him and the forest service then located a scrubbing-brush manufacturer who used small maple blocks for brush backs. The result was that the furniture maker was enabled to sell his waste at a much higher price than it had brought as firewood while the brush maker was enabled to buy brush-back material in suitable sizes at a much lower figure than it had been costing him to buy maple lumber and cut it up.

Firms which have been put into touch with each other through the exchange are expected to notify the Forest Service when their requirements have been met; then their names are removed from the lists. In this way several concerns which early took advantage of the plan have dropped off the lists; but as more and more manufacturers learn of the wood-waste exchange the lists are steadily growing.

# # # #

1915

(From the Forest Service, U. S. Department of Agriculture, San Francisco Office)

LAND ELIMINATED FROM F-178

STANISLAUS NATIONAL FOREST

On April 13 the President signed an Executive Order eliminating 32,088 acres of land from the Stanislaus National Forest, California. This action is the result of a recommendation made by the Secretary of Agriculture, based on reports and recommendations submitted by the Forest Service. Examination of the land involved showed it to consist mainly of river slopes and hills on the north side of the Merced River. The cover is mainly chaparral, although there is more or less scattering timber in places. The total amount of such timber was estimated to be not over one million board feet. There are very few settlers upon the land eliminated. The climate and soil are such as to render some areas of future value for agriculture, but this value is largely dependent upon the development of water for irrigation purposes, which is now lacking. The examination thus demonstrated that the land is not chiefly valuable for national forest purposes and the recommendation for its restoration to the public domain followed as a matter of course.

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(From the Forest Service, U. S. Department of Agriculture, San Francisco Office)

FOREST FIRE PROTECTION EXHIBIT

PANAMA PACIFIC INTERNATIONAL EXPOSITION R-1

With the approach of the forest fire season in the West, the fire protection exhibit of the United States Forest Service at the Panama-Pacific Exposition is arousing renewed interest. The display graphically shows in detail the measures being taken by the Government to insure the early detection and efficient fighting of forest fires. This is the most important portion of the entire Forest Service exhibit.

In the center of the space is a large model, measuring 12 x 15 feet, showing a ranger district on a National Forest. A lookout house and a lookout tower occupy the two highest peaks. These are connected by telephone with a ranger station which in turn is connected with various users of the Forest at a ranch house, a hotel, and a power-house. The model shows Government roads, trails and bridges, constructed primarily for the purpose of making every part of the Forest accessible to fire-fighters. Fire-fighting equipment boxes are placed at strategic points along trails and roads, and a fire line kept clear of inflammable material runs along one of the mountain ridges.

To one side of the large center model a full-size fire lookout house, fully equipped for discovering and locating forest fires, is build on an imitation of a great boulder on a mountain top. The house is painted white to serve as a conspicuous target for heliograph messages directed toward it by patrolmen. The building contains binoculars through which a distant forest fire is seen; a fire-finder, by the aid of which the Supervisor's office can be informed definitely of the location of a fire; and a special type of telephone in communication with the Supervisor's office. There are also on display in this tower a portable telephone and a portable heliograph outfit for use by patrolmen. A raid of stereopticon machines are concealed within the imitation rock on which the house rests and throw pictures and descriptions on screens built into the rock, which tell the entire story of the fire protection work.

On a redwood tree trunk in another part of the exhibit is displayed a weatherproof iron box telephone, such as is placed along patrol routes on the Forests. This telephone is connected with the telephone in the lookout and with a Supervisor's telephone at the desk of the demonstrator by slack lines attached to tree trunks on swinging insulators, just as the line is installed on a National Forest. This manner of construction enables the line to stand the stress of the elements

through the winter and prevents the wire being broken when a tree falls.

The latest type of fire-fighting tool box, equipped with shovels, rakes, hoes, axes, canvas waterbags and buckets, canteens, lanterns for fighting fires at night, torches for setting back fires, nesting cooking utensils, and emergency rations, occupies a place near the lookout house.

Beside the desk of the demonstrator, who plays the part of the National Forest Supervisor, is hung a master fire map of a Forest, similar to the one in the lookout house. On this map is shown the location of every trail, bridge, road, telephone line, telephone station, ranger station, fire-fighting toolbox and lookout station. At the locations of the lookout points are protractors oriented to correspond with the protractors at those stations. This map enables the Supervisor to locate a fire directly from the reports of the lookouts without any mathematical calculations, and to place to the best possible advantage the force of men available for fire fighting.

Fire warning posters and rules concerning care with fire in the Forests are posted upon tree trunks and in other consipcuous places through the exhibit as they are in the Forests.

# # # #

1915

UNITED STATES DEPARTMENT OF AGRICULTURE
FOREST SERVICE

(From the Forest Service, U. S. Department of Agriculture
San Francisco Office)

F-18

AMERICAN MANUFACTURE OF CREOSOTE INCREASES

Shortagr of Imported Wood Preservative Stimulates Domestic Production - Tie Plants Largest Consumers

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Washington --- : Owing to a falling off since August 1 of nearly 30 per cent in shipments of creosote from England and Germany, whence comes all but a small part of the imported oil used by wood preserving plants in this country, American manufacturers have taken steps which, says a report compiled by the forest service, it is estimated will increase production of the domestic article by about 25 per cent. The imported oil ordinarily forms about 65 per cent of the total used in the United States, where creosote is the most important wood preservative.

The statistics gathered show that wood preserving is one of the most rapidly advancing industries in the country. In 1895 there were fifteen plants in the United States; in 1914 there were 122 plants of all kinds, 100 being of the pressure-cylinder type. Ninety-four of these plants last year used more than 79 million gallons of creosote oil, more than 27 million pounds of dry zinc chloride, and nearly 2½ million gallons of other preservatives, such as coal tar and crude oil, treating a total of nearly 160 million cubic feet of timber; an increase of about 7 million cubic feet over 1913, and of 35 million cubic feet over 1912.

The most important consumers are the large plants in

which railroad ties are treated. The preservatives materially lengthen the ties' period of service, lessen the labor cost involved by renewal, and decrease the drain upon the forests due to tie-cutting. To some extent the treatment of fence posts and other forms of farm timber is being taken up, an inexpensive apparatus and method having been devised by the department of agriculture; but as yet the use of wood preservatives by farmers is on too small a scale to have an importance in the total, while the practice of treating telephone poles is in its incipiency in this country.

"With the rapid advance of this industry as a whole", says the report, "the choice of preservatives has been fairly well established, but the kinds and classes of materials to be treated need development along certain lines. In Germany and other European countries practically all cross-ties laid by the railroads are treated with chemicals or preserving oils. In this country but 30 per cent of the ties purchased by the railroads are subjected to such treatment. The number of poles treated in this country is a very small per cent of the total in use."

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UNITED STATES DEPARTMENT OF AGRICULTURE
FOREST SERVICE

(From the Forest Service, U. S. Department of Agriculture, San Francisco Office)

LAND ELIMINATED FROM THE SEQUOIA NATIONAL FOREST S91

On June 9 the President signed a Proclamation eliminating approximately 157,320 acres of land from the Sequoia National Forest, California.

This elimination was recommended by the Secretary of Agriculture after careful examination of the lands in question had been made by the Forest Service. The action is similar to that taken recently on the adjoining Sierra National Forest, where a considerable area was eliminated, and it follows out the general policy of the Forest Service to eliminate as rapidly as possible from all National Forests such lands as are found to be chiefly valuable for agricultural purposes.

A large portion of the lands now eliminated from the Sequoia Forest has already been acquired by private parties, either before their inclusion in the National Forest or through the Forest Homestead Act. The alienated area, of course, includes most of the best agricultural land. The areas which still remain Government land were found to be generally more valuable for agriculture and grazing than for forest purposes and their elimination was accordingly recommended.

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UNITED STATES DEPARTMENT OF AGRICULTURE
FOREST SERVICE

(From the Forest Service, U. S. Department of Agriculture, San Francisco Office)

ELIMINATION OF LAND FROM S-2

SANTA BARBARA NATIONAL FOREST

On June 9 the President signed a Proclamation eliminating approximately 85,000 acres of land from the Santa Barbara National Forest, California.

This elimination was recommended by the Secretary of agriculture after careful examination of the lands in question had been made by the Forest Service. A large portion of the lands now eliminated has already been acquired by private parties either before their inclusion in the National Forest or through the Forest Homestead law. The alienated areas, of course, include most of the best land. The areas which still remain in Government ownership are semi-arid, brush-covered lands of little value for grazing and agricultural purposes but of practically no value for forest purposes.

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UNITED STATES DEPARTMENT OF AGRICULTURE
FOREST SERVICE

(From the Forest Service, U. S. Department of Agriculture
San Francisco Office.)

F-8

Wood Waste Used

For Pulp

Washington, June 26:--The use of a steadily increasing amount of wood waste in the manufacture of pulp is indicated by figures compiled by the Forest Service. Although the pulp industry showed a decline in the last year for which complete figures are available (1914) on account of the increasing cost of raw material and general business conditions, more wood waste was used than in any previous year.

Approximately 330,000 cords of waste with a value of $1,400,000 were utilized by 35 of the 200 pulp and paper mills of the United States. It is thought that as the price of cordwood goes up the amount of wood waste used will become greater.

The Canadian pulp industry has, it is stated, had a vigorous growth during the last few years and the greater portion of its product is marketed in the United States. An average cost of about $6.50 per cord, as compared with the $10 to $16 per cord which many manufacturers in this country are paying for pulpwood, is the reason given for the growth.

It is pointed out that the development of the supplies of spruce, and white and red fir in the National Forests of the West and in Alaska, together with the abundance of cheap water power, will eventually attract the paper industry to locate in those regions. Suitable pulp timber can be delivered to desirable mill sites for the next twenty to forty years at prices of about $2.50 to $4 per cord, say experts of the Forest Service. It is thought that the low price of material and power will more than offset the higher freight rates on the product to the eastern markets.

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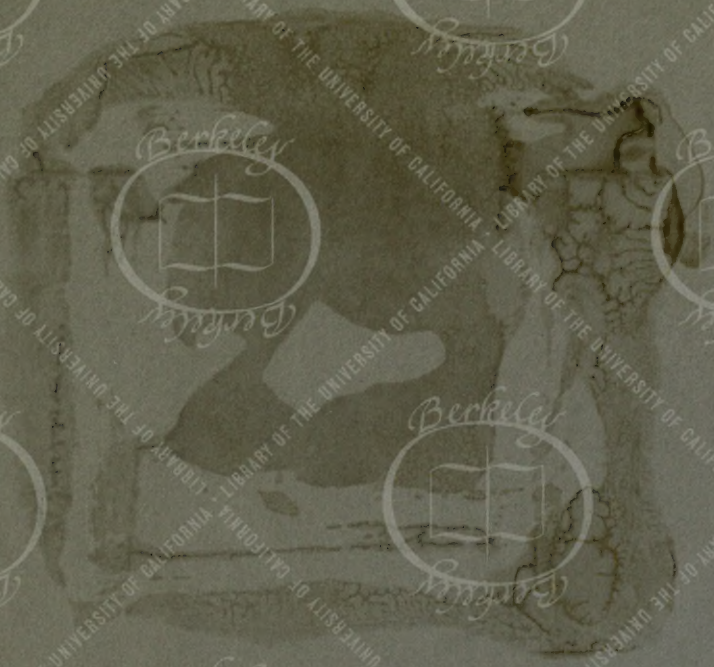

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